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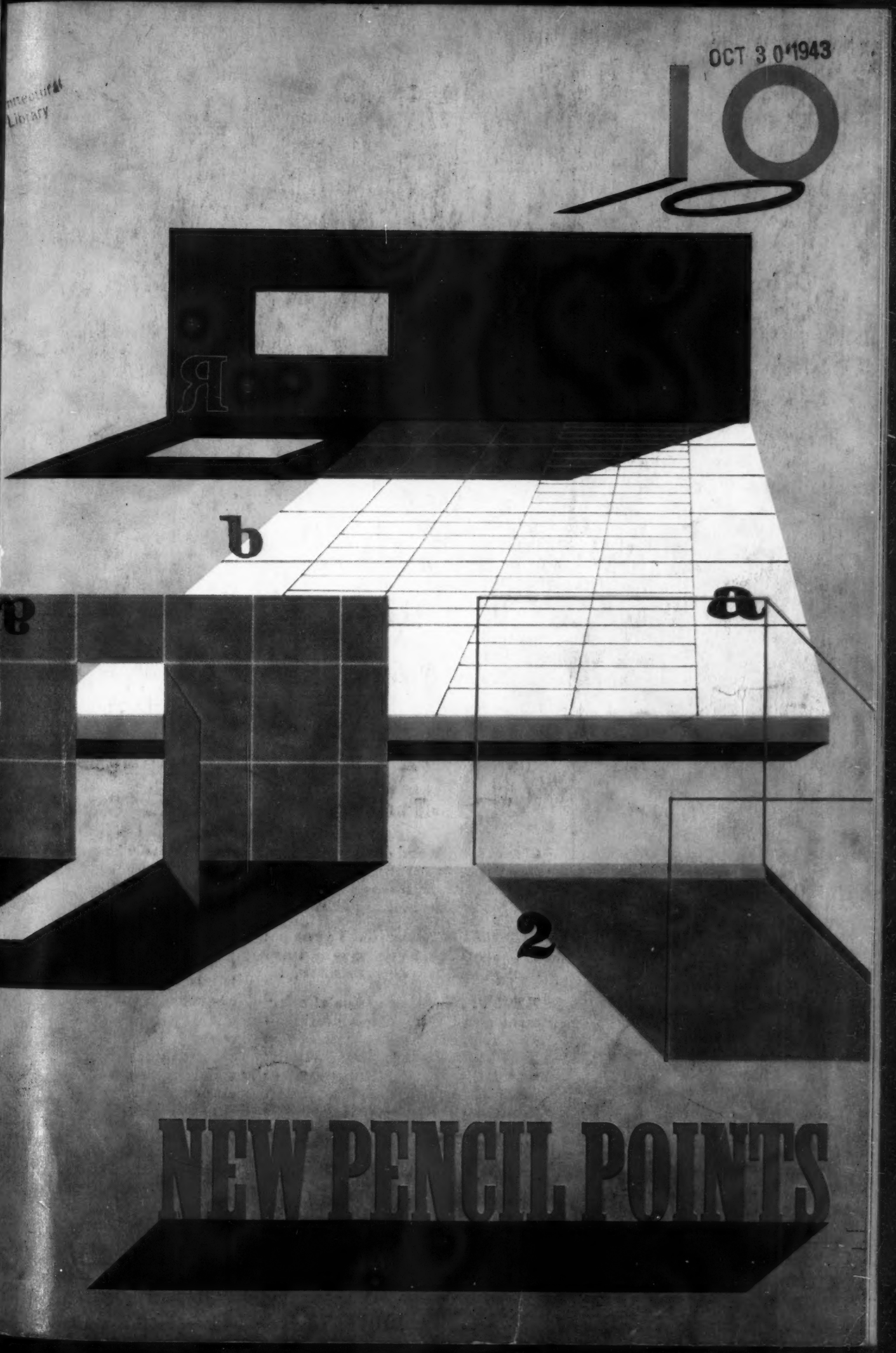

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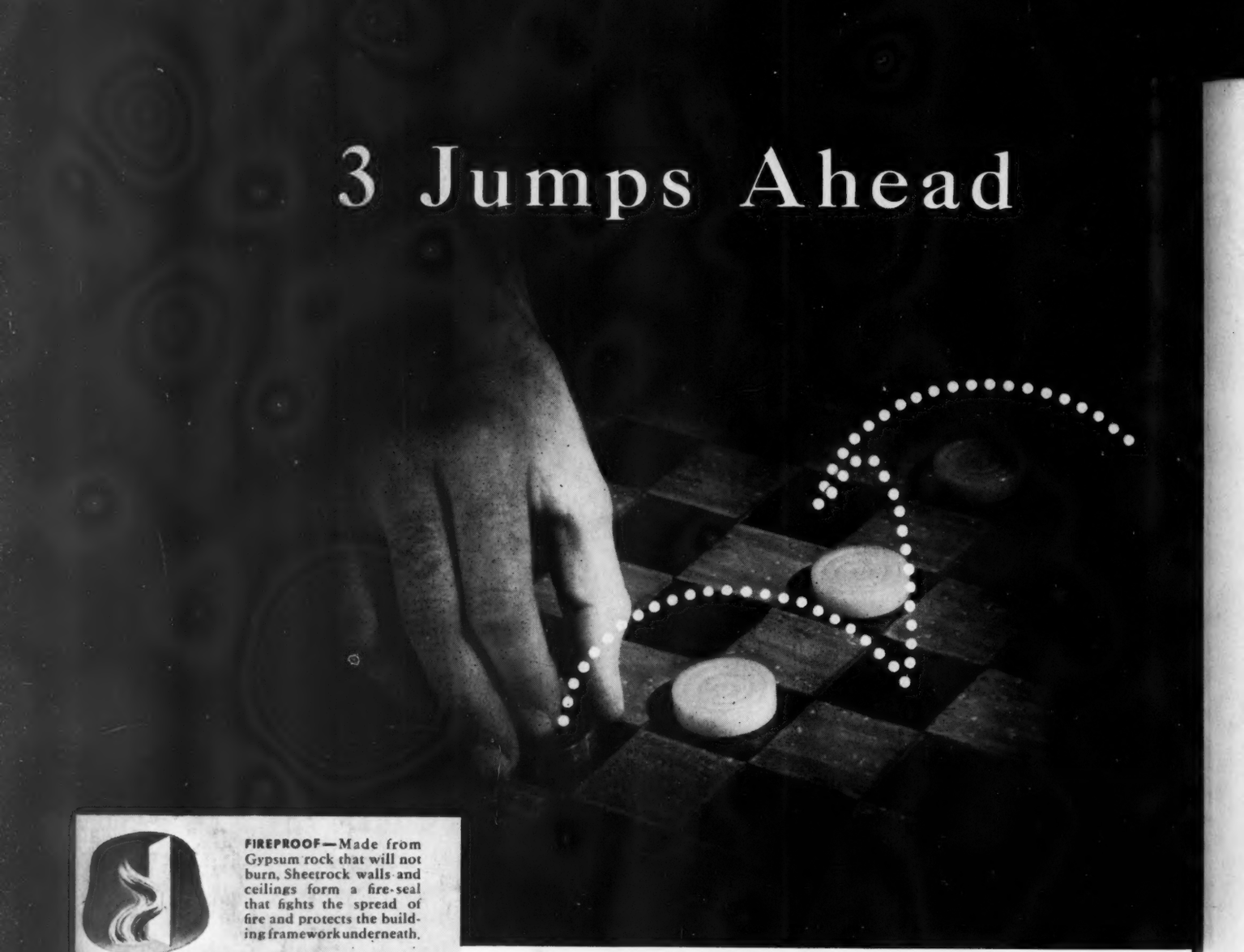

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New Pencil Points, October, 1943

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Next Month:

"Aviation and Architecture" will be the theme of an article by Francis R. Meisch, architect, of Minnesota, who is associated with Northwest Airlines. Mr. Meisch knows the problems that air transport faces now and will have to solve immediately when the war ends. Many of these are architectural in nature.

KENNETH REID, Editor; FRANK G. LOPEZ, Managing Editor; DON GRAF, Technical Editor; BERNARD RUDOFSKY, Associate Editor; MIRIAM WHITE, Editorial Assistant; JEDD REISNER, STANLEY SHARP, Drafting; PHILIP H. HUBBARD, Publishing Director; JOHN G. BELCHER, Advertising Manager; JOHN ZELLNER, Circulation Manager. Cover design, layout, and typography by Rudofsky.

Published monthly by REINHOLD PUBLISHING CORPORATION, East Stroudsburg, Pa., U. S. A. Ralph Reinhold, President and Treasurer; H. Burton Lowe, Vice President and Secretary; Philip H. Hubbard, Vice President; Francis Turner, Vice President; Gilbert E. Cochran, Vice President; William P. Winsor, Vice President. Executive and editorial offices: 330 West 42nd St., New York 18, N. Y. Subscriptions payable in advance: 1 year, $3.00; 2 years, $5.00 in U. S. and Possessions, Canada, Cuba, Mexico, Central and South America; 1 year, $5.00 in all other countries. Single copies, $1.00. Remittances must be by International or American Express Money Order or draft on a U. S. bank, payable in U. S. currency. Subscribers are requested to state profession or occupation. Changes of address must reach us by 20th of month to assure receipt of next issue, must include both old and new address. Articles, drawings, photographs, etc., submitted will be carefully considered, but the publisher will not be responsible for loss or damage.

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Entered as second class matter, July 8, 1941, at the Post Office, East Stroudsburg, Pa., under the Act of March 3, 1879. Volume XXIV No. 10, October, 1943. Indexed in Art Index.

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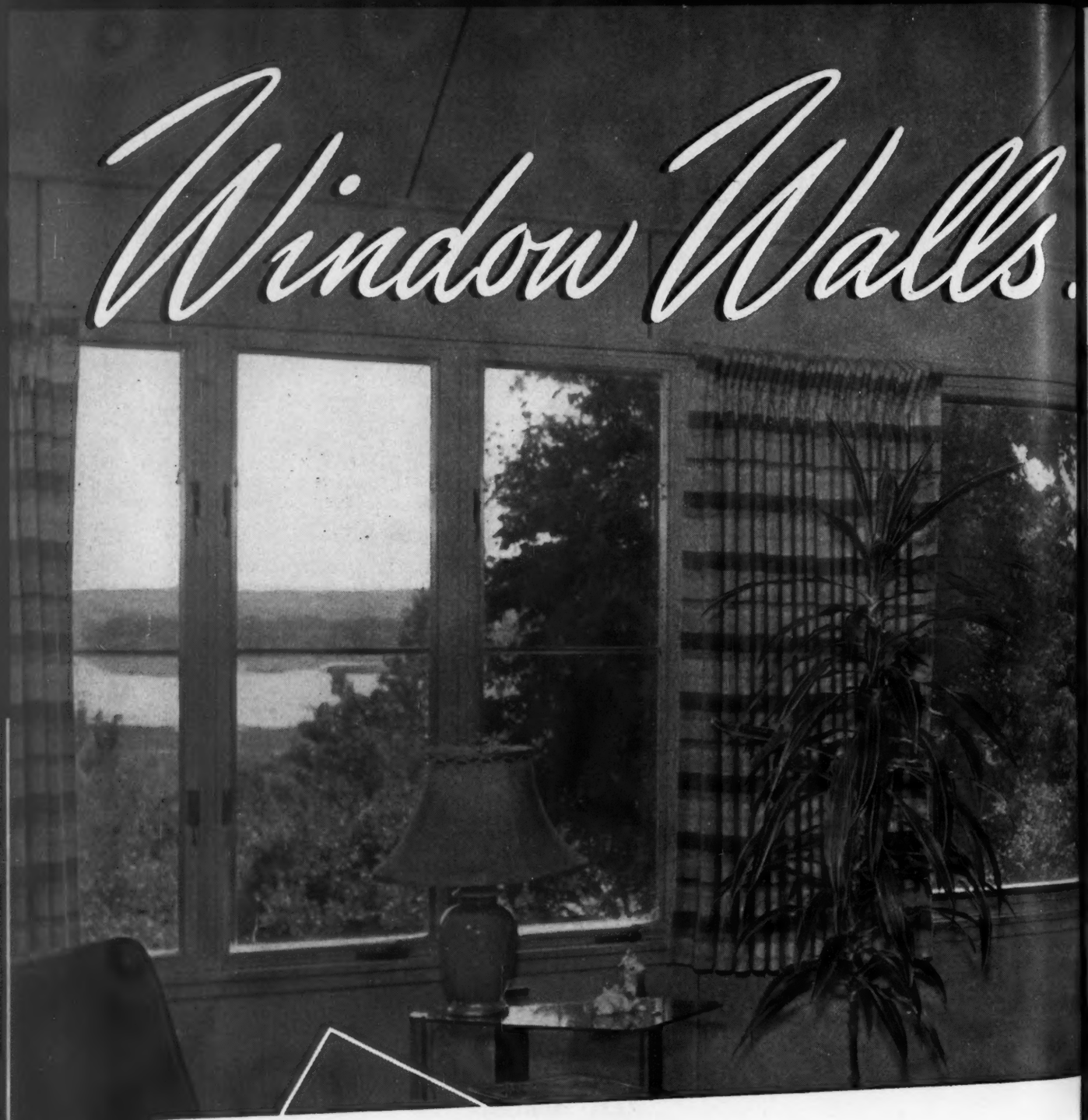

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VIEWS

Opinions from readers

Remarks from the editors

Data wanted

Changes of address

Reinforced Concrete Addenda

Dear Editor

You are to be commended for publishing in the August issue, "Architecture and Reinforced Concrete," by Mr. Paul Weidlinger. This is an able and well written discussion which should be of much help to architects as well as to engineers. I would like to add a few comments.

1st. The 1941 Standard Building Code of the American Concrete Institute covers the new design methods quite fully. This is particularly true with reference to flat slab construction. See chapter X of the code. The old empirical rules for flat slab design are abandoned in favor of "elastic analysis", which is made the fundamental principle.

Under the old rules flat slab was limited to buildings 3 or more bays wide in which the bays were approximately equal in size and panel lengths did not exceed 4/3 of panel widths. Column diameters were required to be not less than 1/15 of the span or 16 inches minimum. Flared column capitals were required, but drop panels were optional. Solid concrete slabs were required.

Under the code all of these restrictions have been removed and the design is based on unit stresses determined by elastic analysis. A building can be one bay wide if desired. Metal column caps embedded in the slab can be used in place of exposed concrete capitals and credited with their values in resisting shear and bending. Tile fillers or removable dome forms may be used in the slabs.

2nd. The implications of these changes have not yet been fully realized by either the engineers or the architects. The new code permits the use of flat slab construction in practically all types of buildings, whereas it has been limited largely to warehouse and factory buildings. The use of metal column capitals permits the use of flat slab construction in steel frame buildings. It also permits the use of flat slab construction in buildings which have exterior frames of concrete and interior columns of steel, steel pipe, or cast iron. It also permits the introduction of steel or metal columns in special locations in reinforced concrete buildings where it is desired to save space or for other reasons. Flat slab construction may now be used in buildings which have exterior bearing walls, that is, buildings in which the slabs have no restraint at the outside wall. This was not provided for under the old codes. Under the new code there is no restriction as to the size or number of unframed openings in flat slabs, except as dictated by unit stresses. . . . . .

WALTER H. WHEELER, Architect, Engineer
Minneapolis, Minn.

Americanism in Architecture

Since the recent exchange of letters debating the subject of Americanism we have received from both Messrs. Cameron Clark and Percy D. Bentley a clarification of their views. Both gentlemen have disclaimed racial intolerance and regret having given the impression that their irritation was caused by any blanket prejudice against foreigners or racial groups. They both feel, however, that architecture designed in emulation of contemporary work in foreign countries is objectionable in the United States. We are pleased to accept their declaration of freedom from racial prejudice and hope that question will not again be raised. We disagree with their opinions of some of the examples of contemporary American architecture we have published and which they have denounced as ugly. At the same time, we respect their right to hold their own opinions on these matters as is becoming in a free democratic society. Their letters follow.

—EDITOR

Dear Editor:
An explosive protest of mine to you with perhaps an unfortunate reference to "Furriners" diverted attention from my real complaint of too much stress being given by the architectural magazines to the pernicious wave of ugly building design. The Architect's position is not helped in the public's estimation by this over-display of haywire experimentation. Neither is he to be helped by the "Crystal Gazers" prophesying the millennium in the next decade.

We gain only when the public feels that we have something to contribute to the American Way of Life. An Architect's services should be a worthwhile long term investment. Perhaps our study of history leads us into the everlasting discussion of Style. I have seen articles on the subject of a new American Style for 35 years—It seems as though it might be like the Search for the Holy Grail.

The Architect's mission should be to design what contributes most to the pleasing appearance of the Cty, Town, or Countryside —regardless of Style. Mr. Saarinen devotes a portion of his book, *The City*, to Correlation. When we adopt that attitude the Architect will again loom large in the public eye. He will have something to contribute—Why should we be a host of "Big Egos"—potential Michael Angelos running wild throughout the land—creating blight as the "Latest Fad" wills.

The Public goes to the Doctor to improve his health or to keep well and would quickly shun the practitioner who became fascinated with some new disease to the extent of trying germs out on any patient that happened in.

Our Cities are examples of the ultimate in Ugliness—even after fifty years of the most intensive application by thousands to Architectural study. We have passed through at least five waves of modern styles or foreign influence in that time. This latest wave is not the wave to cure all waves—Each additional one only adds to the blight.

Every Architect can't be a genius—only a few are chosen. Why must we kid ourselves? The average well-trained Architect, if we disregard fads, could design harmoniously and thereby supply part of a cure for our blighted country.

CAMERON CLARK, Architect
New York

Dear Editor:
Your July issue carried three letters which I am sure the bulk of your subscribers read with considerable amusement. Two of them were directed against Mr. Cameron Clark and myself, while the third was aimed directly at Mr. Clark. I feel that I am entitled to make a reply in the form of an open letter.

Over a year ago I wrote you in response to your request for reactions to your NEW PENCIL POINTS policy. Had you seen fit to publish that letter I feel sure that a different emphasis would have been placed by my critics on my plea for "good old American names."

I hold no enmity toward names of foreign origin but with our editors, who seem to believe that any design by a man with a foreign name must be good. That of course is just unadulterated rubbish. And to pretend that any crack-pot plan or elevation is good because it is new and different, is beneath our profession. To toss everything aside and condemn it as antiquated because it has some semblance of refinement reflected from the past, is childish.

Those who prefer to turn their architectural talents into caricatures have the privilege, but let's not deify them. Rather, I would suggest that a few pages in the back of our architectural magazines be devoted to them, just as our daily papers have their "funnies" for the children and people who are looking for a good belly laugh.

PERCY D. BENTLEY, Architect
Eugene, Oregon

We replied to Mr. Bentley at some length

(Continued on page 102)

Firm Footing

FOR FLYING FORTRESSES

Coming into port! The crushing weight of these giant airships offers a strenuous test of strength to the runway under foot and challenges the endurance of an airfield's concrete flooring. Long before Pearl Harbor the Raymond Concrete Pile Company was conscripted to construct sturdy underpinning for the broad, level pathways that lead to the sky. Our air bases must not be too few, too late or too weak!

Assuring firm footing for flying fortresses is but one step in the all-out effort to win this war. Raymond men and Raymond equipment are helping to make the country strong in other fields too —laying firm foundations for important military, naval and production projects. For this is a race against time, a contest in which we are all entered and which we must win together. Speed!

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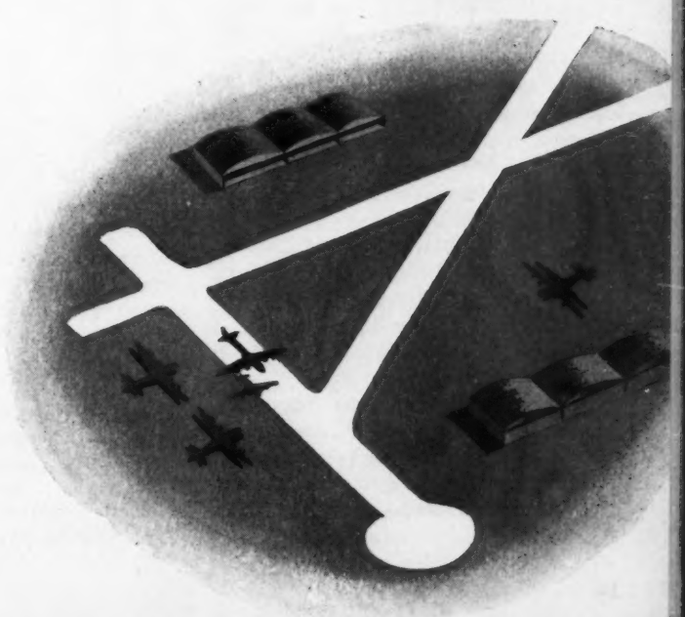

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REVIEWS

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Books

Basic Research in the Field of Housing

Housing Abroad Up to World War II supplemented by comparisons with conditions in the United States. Stella K. Margold. Prepared for Department of Architecture, M.I.T., Cambridge, Massachusetts, 1942.

"This study, unlike all others which have preceded it, presents the data by subject rather than by country. In addition, this study is the first to handle low-cost housing throughout the world, the first to assemble all available factors regarding land acquisitions, especially the prevention of land speculation, methods of expropriation and so on; the first to assemble information on standards of accommodation as they should be and are, and the first to assemble all factors and methods used abroad to reduce construction costs from the technical and administrative points of view during construction."

This quotation from the preface of the book is really a review in itself. A work of great research and comprehensiveness, it is an essential reference book for all serious students of public housing. Its great virtue is what is set forth above—the material is arranged by classes of information instead of by country. If, for instance, you want to know how many square feet of room area are considered adequate, the comparative figures are all in one place. The analyses of legal procedure and the collection of statistical data is admirable; the weakest part of the book is that treating of cost reduction methods. These in any case mean little except in relation to a particular set of conditions, and to be of real value even then should be traced through to their ultimate effect in use and on livability. Costs can be very sharply cut, as our "temporary" war housing has shown, if standards are reduced to the level of incipient slums. M.I.T. deserves its share of credit for making this book available.

—Henry S. Churchill

Housing Yearbook

1943. Published by the National Association of Housing Officials, Chicago. Editors: Hugh R. Pomeroy, Edmond H. Hoben.

In an editorial review, the characteristics of housing in the year 1942 are summed up. Experience showed that housing needs cannot be determined by the NHA alone, but that agencies dealing with manpower, transportation, industrial production, and military activity must join to decide the placement of new buildings. Obviously privately-owned housing declined and what there was, fell into the category of the "family type", very little being rural; while publicly-owned housing increased eighty percent in 1942. The Federal Home Loan Bank computed a four percent rise in cost of building a typical six room frame house in 1942, although privately financed single family houses decreased twenty-five percent in cost because of government restriction on size.

Reviewing organizational changes, the editors point out the use of local housing agencies by FPHA because of the large adjustment in recreational, educational, and transportation facilities entailed by introduction of a large housing project in an urban community. Some confusion existed in the NHA policy which ignored in several cases the local agency, while in others, it gave full responsibility to the local organization. The Lanham Act somewhat clarified the unestablished rent policy by providing the only difference in rents in publicly- and privately-owned war housing would be the margin of profit that is usual in private management. Many local agencies in large cities unfortunately operate under civil service jurisdiction and may be influenced by the evils of that system.

An excellent precis of postwar housing possibilities completes the editorial portion of the yearbook. Because the instigation of housing was a make-work program during the depression, not due to any careful consideration of local needs, as similar housing has been in other countries, it has tended, like Topsy, to "just grow".

The Administrator of NHA, John B. Blandford, Jr., contributes a summary of *The First Year of the National Housing Agency*, in which he details the problems confronting them—focusing attention on housing as a war-time need, on obtaining funds for housing, and on restricting occupancy to war-workers, as well as on programming for all types of housing. Study of materials needed and cooperation with local agencies were two major aspects of the program. In commenting on postwar housing, Mr. Blandford urges consideration now of the machinery—legal and financial—for making a successful future for housing.

Herbert Emmerich, in *Public Housing in 1942*, and as Commissioner of the Federal Public Housing Authority, one of NHA's subdivisions, gives general comments upon the developments in organization and in policy of FPHA. He feels that the standard plans developed made it possible to work out a blanket priority system but ignores the evils inherent in standards used in varying climates, terrains, and social set-ups. Much technological advance has of course accrued from scarcity of materials and price limitations. Most important is Mr. Emmerich's realization of the many fallacies in the present program as they relate to postwar building.

The Federal Housing Administration's First War Year by Abner H. Ferguson, Commissioner, F.H.A., surveys work done for war housing by a regulated private enterprice. The lack of an intelligent use of private enterprise has often caused serious planning mistakes to be made.

Mr. John H. Fahey, of the Federal Home Loan Bank, has here described the financing aspects of war-influenced home building. Perhaps the most important result is the tremendous reduction of foreclosures in 1942 and the unloading of much real estate.

Mr. C. B. Baldwin covers the work of the Farm Security Administration. The most important work done by this agency was in providing 95 farm labor supply centers in districts where migratory farm labor is in demand most often.

Priorities in the War Housing Program: the Role of the WPB is covered by F. J. C. Dresser, Construction Division, WPB.

Federal Rent Control in 1942 by Paul A. Porter, Deputy Administrator, clarifies one of the most confusing aspects of the anti-inflation attempts of the government, by outlining the scope, method, and adjustment provisions of this control.

The latter half of the book is devoted to a very valuable directory of the nation's housing agencies and their members.

Margaret G. King

Airways To Peace

An Exhibition of Geography for the Future. The August 1943 Bulletin of the Museum of Modern Art, N. Y.

To those who have seen the exhibit this bulletin does not cover the interplanetary feel of space arrangements in the Museum.

In his running commentary Wendell L. Willkie points out the fallacies in the use of the Mercator projection maps if our major concern is to be not shipping, but air travel. The amount of distortion, increasing as the land lies farther from the equator, and caused by the arbitrary flattening out of what is globular in shape, is shown here to be enormous.

(Continued on page 20)

NEWS

Design and construction
Developments afield
Building regulations
Related professions
Products progress

THE NATIONAL WAR FUND

"Basically the Fund's purpose is a very simple one: to shorten the war, save lives, and stretch out the hands of mercy to those of our allies who must and shall have our help."

"Born of war, and linked to the peace by effective association with local home agencies for health, welfare and recreation, the National War Fund is a philanthropic federation with three simple aims; first, to determine the nature and the extent of the war-related needs; second, to see that everybody has a chance to contribute to the funds required; and third, to channel the sums raised for its member agencies wherever American help is currently most needed—enough and on time."

Let's help our local divisions of the National War Fund Campaign to raise their quotas.

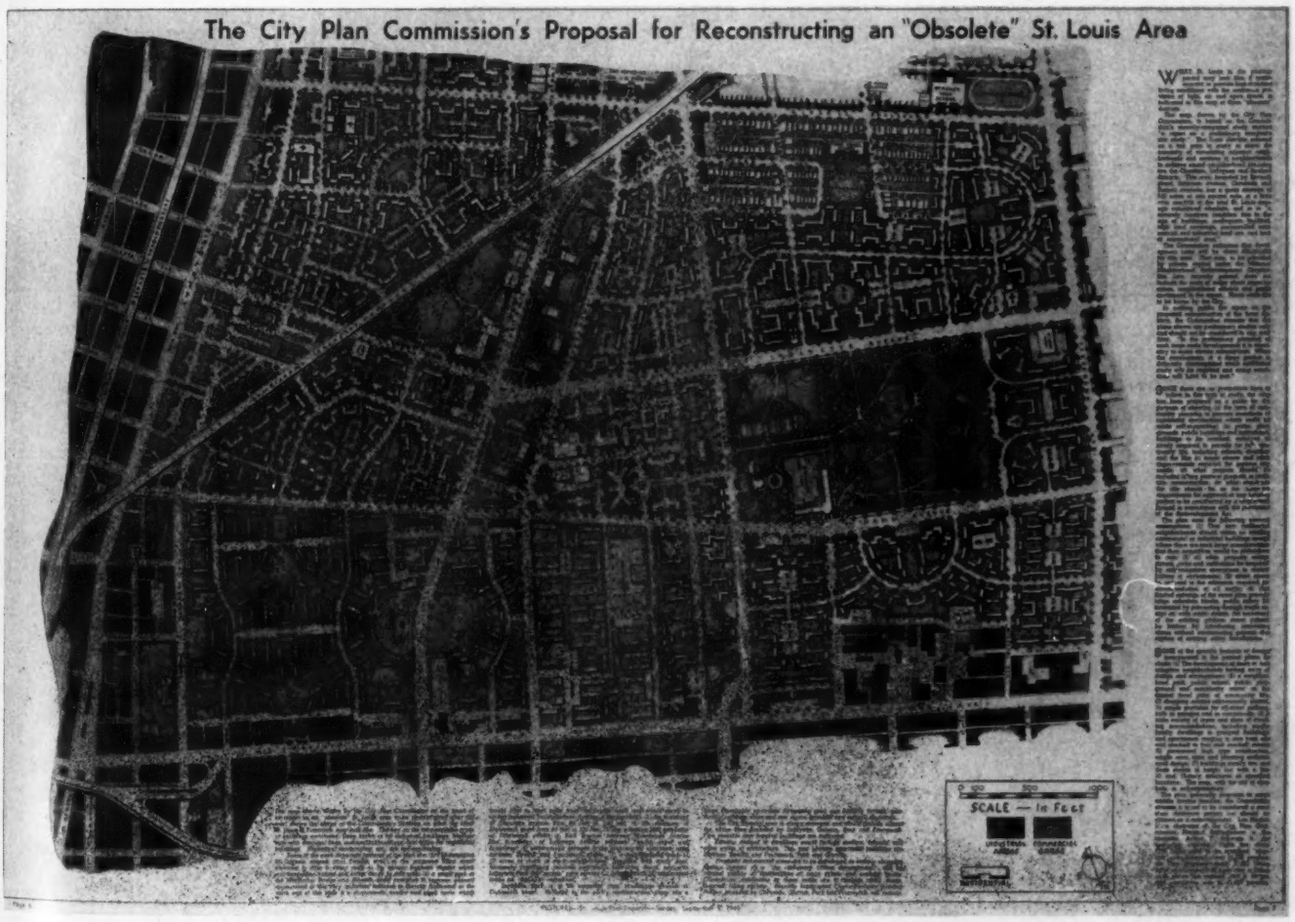
South America is building actively, construction being stimulated rather than curtailed by the war, according to Dean Leopold Arnaud of the Columbia School of Architecture who has just returned from lecturing in South America where he was sent by the Division of Cultural Relations of the United States Department of State. He attributes this great activity to the Latin Americans' tendency to invest in real estate rather than stocks and bonds, as does his northern neighbor. Apartment building and private dwelling construction is predominant and of especial interest to us are their comparatively larger and more luxurious rooms even though they are built for the white collar class. He spoke well of the South Americans' uses of reinforced concrete in anti-earthquake structures. Amusing was his report on the lack of elevators in recently constructed buildings where only the shafts exist and inhabitants cheerfully resign themselves to walking upstairs, downstairs, until the war is over. It is a matter for gratitude that they do not go in for skyscrapers as do we here.

Dean Arnaud's itinerary took him first to Santiago by air, thence to Buenos Aires where he gave twelve lectures at the Escuela Libre de Estudios Superiores. Six were on the history of architecture in the United States from the early Colonial period to the present and six were on materials and methods used in this country. The Argentines showed especial interest in the technological reports which he gave to them, heating, lighting, plumbing, and related subject matter.

Dean Arnaud, in speaking of the Latin Americans said they "are eager for knowledge, particularly of technical developments from other countries of the hemisphere. They realize that to acquire such knowledge is not a matter of copying outward forms from other cultures, but of understanding a

(Continued on page 100)

The City Plan Commission's Proposal for Reconstructing an "Obsolete" St. Louis Area

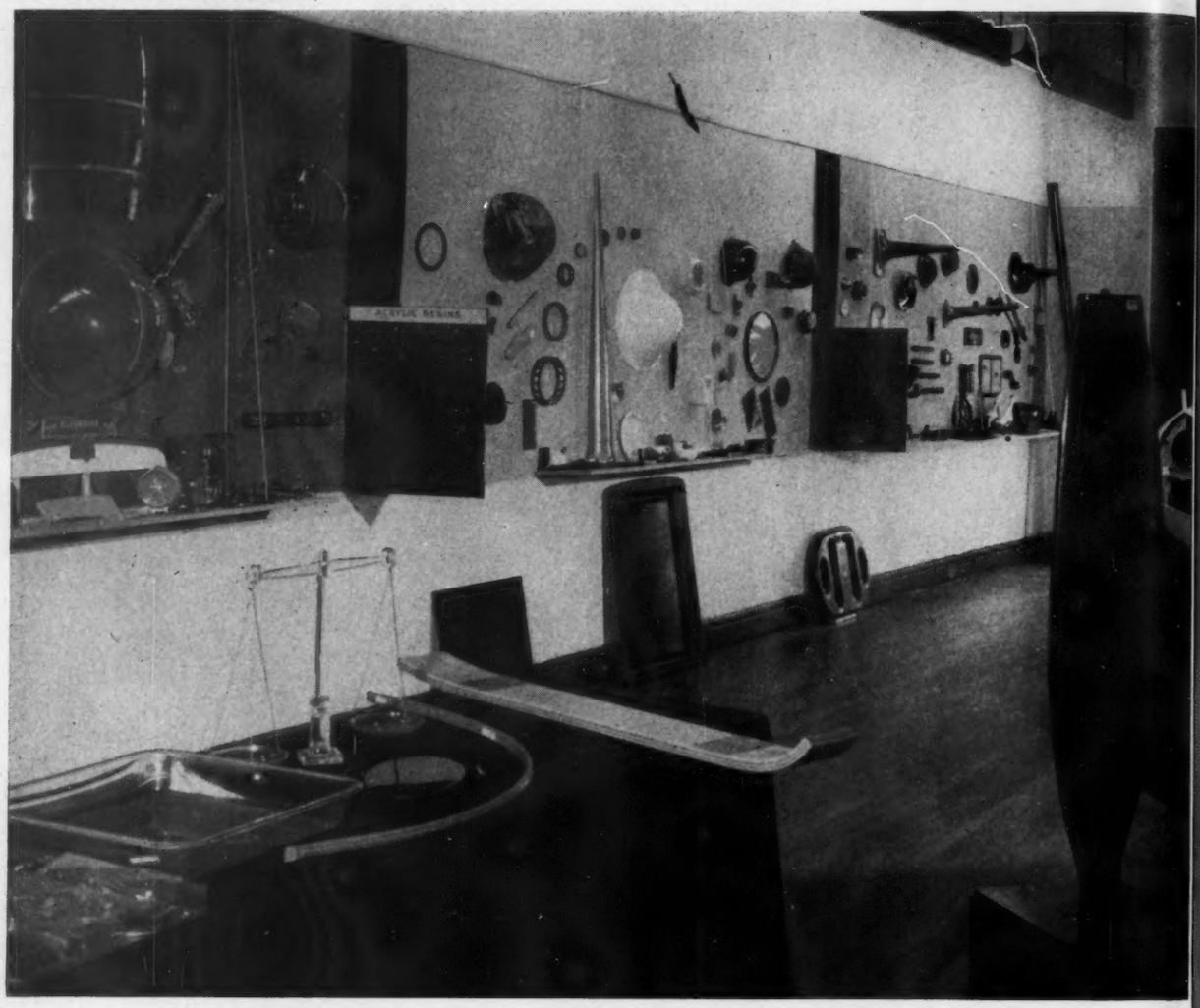


RECONSTRUCTION PLAN FOR THREE OBSOLETE ST. LOUIS DISTRICTS

"What St. Louis in the postwar period may look like, if reconstructed to provide high standard living conditions with the maximum provision of light, air and open space, is indicated in this map of three 'obsolete' districts. . . . The three districts selected as a test area of study to show the necessity of correlating adjacent neighborhoods and sections of neighborhoods to achieve sound neighborhood planning are the Chouteau, Lafayette and Soulard districts. . . . The Commission estimates that development costs will be about $55,000,000 for this area. That sum, to be provided by private capital under the Missouri Neighborhood Redevelopment Corporation Law, recently passed, does not include the costs of major street improvements, neighborhood schools, and parks envisioned in the report. Those costs are to be borne by the City."—*St. Louis Post-Dispatch*

NEWS

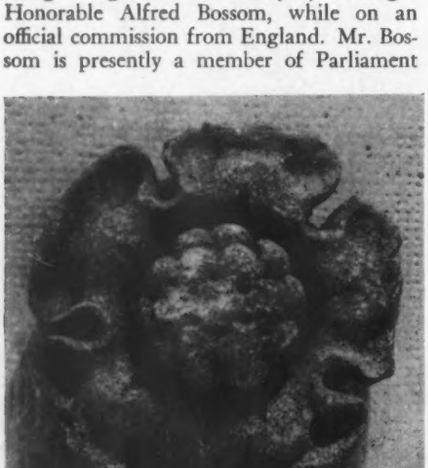
Plastics Exhibition



Photos George H. Van Ando

Above are two views of the Plastics Exhibition held at the Architectural League of New York in September. A great variety of objects, in their various stages of production, was shown and indications of seemingly infinite possibilities were given. Almost every type of material known to the plastics industry was included. There is an auxiliary gasoline tank for an airplane engine, which is made of moulded plywood, and a plastic plywood airplane fuselage which is made of Sisal filler moulded

The Houses of Parliament come to New York. At a recent Architectural League meeting Hugh Ferris was seen fondly carrying about this stone boss taken from bombed fragments of England's House of Commons and presented to the League after being brought to this country by the Right Honorable Alfred Bossom, while on an official commission from England. Mr. Bossom is presently a member of Parliament representing one of the Essex districts and was formerly an actively practicing architect in the United States and a member of the Architectural League. His practice specialized in banking structures, many important ones being designed by him both in the east and in the southwest sections of this country. His offices were located in New York City.



Photo, Louis Dreyer

It is planned to imbed this relic (6″ Diameter x 3″ thick), which in all probability is one of the bosses from the center of the groin vaults of the House of Commons, in one of the walls of the League building at 115 East 40 Street, New York City.

The certificate which accompanied the gift reads as follows:

H.R.H. The Duke of Gloucester's Red Cross and St. John Fund

St. James's Palace, London, S.W.1.
13th May, 1943

I hereby certify that this stone was part of the structure of the Houses of Parliament, damaged by enemy air raids on 10th May, 1941.

Vincent Beddeley
On behalf of Red Cross and St. John Fund.

A mid-continent air freight and passenger terminal, one of the largest and serving the most diversified of needs, is being planned for Oklahoma City and is to be financed entirely by local and private funds. Preliminary plans, completed by the Austin Company, call for a $25,000,000 layout embracing six square miles as well as a seaplane base on a 2,500 acre lake adjoining. There will be two 11,000 foot runways, 500 feet wide, to serve glider tow-trains and planes carrying up to 400 passengers or 160,000 pounds of freight, four other runways for commercial planes, a civilian flying field, a helicopter base, a passenger terminal with 100-room hotel and hangars. Rail, highways, and air traffic will be handled. Already more than half the land has been acquired and Mayor Hefner of Oklahoma City stated that they had ample funds to start with and were in a position to acquire the balance.

The London County Council approved the plan for the rebuilding of the County of London which was prepared by J. H. Forshaw, Architect, and by Professor Patrick Abercrombie.

Photos George H. Van Ando

with phenolic resin and is light enough to be lifted by one person. Other especially interesting objects are: transparent plastic gun turrets and plane noses; a plastic bugle which is said to be superior to its brass predecessor; fuel and water line piping; and, as a contribution to science, biological specimens are preserved "for eternity" in their full natural color, size, and shapes in crystal-clear blocks of plastics. The exhibition is scheduled for Los Angeles, San Francisco, Chicago, Detroit, Cleveland, Hartford, Philadelphia and other cities

Upwards of forty architects are preparing, for presentation to the public, plans for the redevelopment of Greater Detroit—all of them giving their time and abilities as a public service. "The objective of the GROUP's" (Architects Civic Design Group) "program is to study broad plans for specific locations in the metropolitan area with the purpose of illustrating some of the possibilities of the area's redevelopment and of instigating public discussion and appreciation of well planned projects on a large scale. While the present need for such proposals is especially keen because of the extensive building activity that is expected immediately after the war, the GROUP's program goes beyond mere postwar reconstruction proposals and envisages the demonstration of principles that may influence the growth of the city for decades to come."

At a meeting of the GROUP at the Cranbrook Academy of Art on September 29th the suggestion was made by Mr. Saarinen and concurred in by the members to broaden the scope of each project by encompassing a larger, and better defined, geographic area in each case and by assuming a more comprehensive program of elements to be included in the area. Saarinen also suggested that each member study more thoroughly the relation of the needs of his area with those of the city as a whole. The members decided to make an effort to interrelate the studies undertaken by the group with the broad studies of the "Detroit Sphere of Influence" being made by J. Davidson Stephen at Cranbrook under Saarinen's direction.

Branson V. Gamber heads the GROUP and Eliel Saarinen acts as consultant. The executive committee consists of Buford L. Pickens, Suren Pilafian, Arthur K. Hyde, and Amedeo Leone. George Emery, Detroit City Planner, has offered the cooperation of his department in providing basic information. The participating architects are members of the A.I.A. and of the Michigan Society of Architects.

Each member or team of members is assigned a particular area for study and the schedule calls for completion of these studies during the coming winter and presentation of them by means of public exhibitions, lectures, and meetings, and through reproductions in local and national publications.

This contribution is being made by the architects to awaken in the interested citizens a greater realization of the value of preparing broad basic plans preceding the design of individual buildings.

Exhibitions of interest to architects visiting New York City in October and November will be those at THE ARCHITECTURAL LEAGUE: *Architect-Engineer Exhibition,* drawings showing the overlapping of the works of these two groups, October 25 to November 13; *Francis Lenygon Memorial Exhibition,* October 18 to 30.

Of special interest will be the drawings made in connection with city and regional planning for the Detroit area. These were prepared by J. Davidson Stephen, A.I.A., while he was at the Cranbrook Academy of Art working under the direction of Eliel Saarinen. (October 11 to 25 at The Architectural League, New York City.)

This exhibit demonstrates some of the principles outlined in Saarinen's book, "The City." It indicates that a city must take into account an area considerably greater than the legal city-limits, and shows a procedure whereby separate communities may be planned in detail while keeping in mind their relation to the larger concept of planning.

NEWS

Report on a meeting of the New England Council held in Boston on September 9th and 10th, 1943. This organization, established eighteen years ago, is supported by business and its purpose is to coordinate the commercial planning and development activities of its member states. The most significant discussion of the two-day conference occurred during an executive session of the Community Development Committee. This meeting was heavily veiled instead of publicized in spite of the public nature of the matters discussed.

Mr. W. W. Barrows, retained by the council to conduct research on the housing needs of the region, reported on the disposition of publicly and privately financed housing and the effect of the Lanham Act and the Thomas and Wagner Bills on housing after the war. Mr. Barrow's most startling opinion was a commentary on what New England housing would be after the war. Mentioning the "ill effects" of modern buildings in New England he advised a set of "Georgian" principals for housing "design," these houses to have the "latest" in modern plumbing and kitchens placed in Georgian shells. In other words technical advance would affect architecture in New England only by modifying the use of the Georgian tradition.

Mr. Richardson, from the National Committee for Economic Development, defined the sole aim of that body as the stimulation of business to greater production in the postwar period, the goal being the absorption of 55 to 57 million workers producing 140 billion dollars worth of goods, a 40% increase over pre-war figures.

Dr. Ray B. Westerfield, professor of economics, Yale University, explained a program for citizen participation in postwar plans for the city of New Haven, Connecticut. It is proposed to form taxpayers' groups to do research on physical and economic aspects of the existent municipality, thus to create an awareness of civic responsibilities as well as a volume of guidance material in shaping proposed development. Emphasized was the fact that the scheme looks to municipal sources and to private enterprise for financing of improvements. The plan seems comprehensive enough in scope to be of great value in municipal development. This type of program is well outlined in a C.E.D. booklet published by the U. S. Department of Commerce called "Jobs and Profits."

Mr. John Kiley, Boston realtor, during the informal discussion, suggested a strong program of education on planning to be directed at the public. He discussed the problem of free endeavor as opposed to government planning. The important question of rehabilitating civil service workers for use in private industry was covered.

The Council's Friday session concerned railroads, fuel supply, the farm front, problems of ownership and finance of New England business enterprises, and the renegotiation and termination of war contracts. Most of the speakers addressed their facts to the Congressmen at the session hoping that New England's problems would receive consideration in Washington.

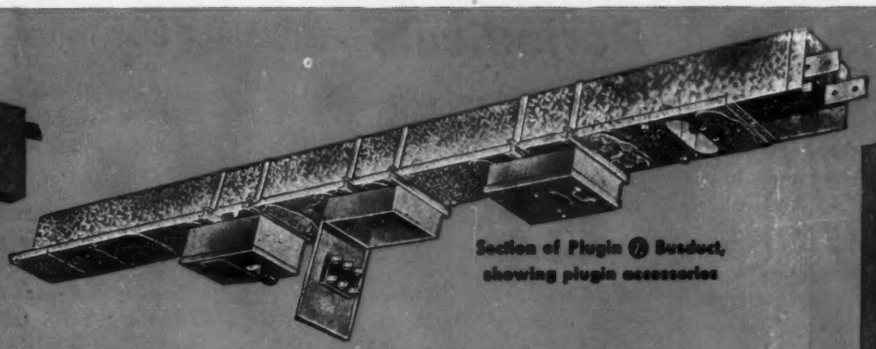
Charles Scribner's Sons' window display featured for one week in September the recent book by Eliel Saarinen, THE CITY, ITS GROWTH, ITS DECAY, ITS FUTURE (Reinhold Publishing Corp.). The colorful jacket and the large maps attracted much attention from the passing Fifth Avenue crowds. The exhibit which was composed by J. Davidson Stephen, consisted of models and drawings, including a large map, a small model, blueprints, detailed plans, and data of the Plymouth, Michigan, region, which is the subject of a study by the Cranbrook Academy of Art of which Mr. Saarinen is director.

The Ministry of Public Works and Communications of Ecuador announces that the closing date of the first stage of the Architectural Competition for the Legislative Palace in Quito has been changed from October 1 to December 31. Competitors will therefore have three more months in which to complete their entries. Additional details may be obtained from the Pan American Union, Washington, D. C.

The ugliest house in Mexico City is the subject of a $30 prize being offered by the Mexican Society of Architects. Their object is to show the younger men in the profession what to avoid. This is one method of educating—by contrasting the extremes.

Houston, Texas has just seen completed the nearby giant rubber plant for the Goodyear Rubber Company. 32 buildings, 400 acres, 60,000 tons a year, less than one year in construction—is the record.

NEW PENCIL POINTS ***received a national editorial award "for refinement of a publication of outstanding typographic excellence" in the sixth annual competition held in September by the magazine,*** **Industrial Marketing.** ***Entries, which covered the work of the year ending July 31, 1943, were made by 290 business and technical magazines. This competition was started in 1938 for the purpose of "giving recognition to the outstanding work of business paper editors in keeping business and industry informed on the latest and most effective practices for their guidance and efficient operation."***



Section of Plugin Busduct, showing plugin accessories

Shotbreak Switch

EST. THE SIGN OF A FA 1891 BETTER JOB

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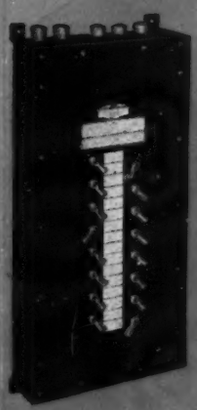
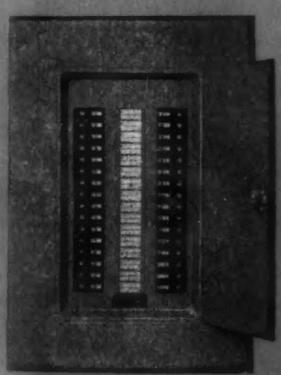
Narrow Column Type Panelboard



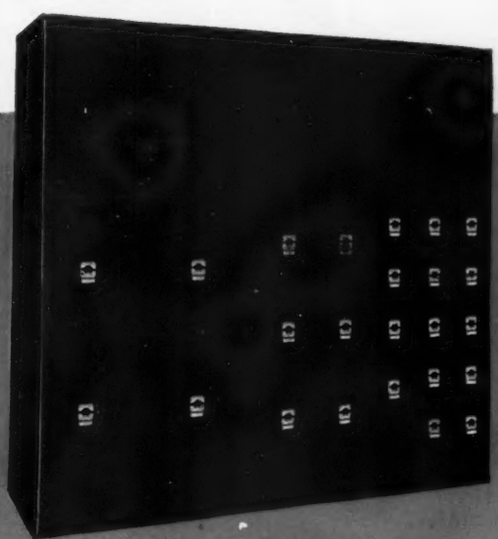
Dust-tight Panelboard, with Type AC Thermag Circuit Breakers



Type AC Thermag Circuit Breaker Panelboard

LNTP Panelboard

Dubibreak Lighting and Appliance Branch Circuit Panelboard



Klempswitchfus Switchboard

Pulfuzswitch Distribution Panelboard

REVIEWS

(Continued from page 10)

Perhaps the most important aspect of the entire exhibit is bringing to all who saw or read of it the fact that the North Pole, or great circle, route is the shortest one to any point on the globe—not the east-west route which has been in use until recently.

This publication covers the many types of globes and maps exhibited as well as a review in cartoon, drawing, and photograph of the progress of aviation beginning, of course, with the attempt of Icarus.
The exhibit itself is largely three dimensional and it is only natural that any publication would not do it justice but serve merely as a guide to the over-all concept.

—MARGARET G. KING

Periodicals

The periodical reviews were written by Margaret Greenough King.

Australia

BUILDING AND ENGINEERING. The official organ of the Master Builders' Federation of Australia, the Illuminating Engineering Society of Australia. (May 24 Issue). With the exception of a truly termed "fine modern hospital," Parramatta District Hospital in Sydney, there is a multitude of very mediocre pieces of Australian architecture current in this issue. Evidently the Government Architect is far advanced beyond other Australian architects though the exact opposite is true in America; witness the new Veterans' Hospitals published in the *Federal Architect.*

Some of the *Brazil Builds* architecture is favorably commented upon, though the *Rebuilding Britain* receives strong disfavor along with such projects as the Merritt Parkway because it eliminates buildings from the main trunk-line highway. To quote ". . . but what . . . is the function of a road unless it is used to take people by the shortest or most expeditious routes from one building to another?" The writer can see no farther than the "end of his nose" for he feels it tragic that no one will ever again be able to say, "The tram stops almost at our door." Obviously tragedy is only implicit in this short-sighted view of planning for better living.

(June 24 Issue). There is a very amusing squib at the opening of the book urging people to build their homes in the "classic style and thus bring continuous joy to themselves". In itself this absurdly retrospective comment is worth nothing, but it does indicate a type of thought in existence though fortunately growing proportionately smaller each day.

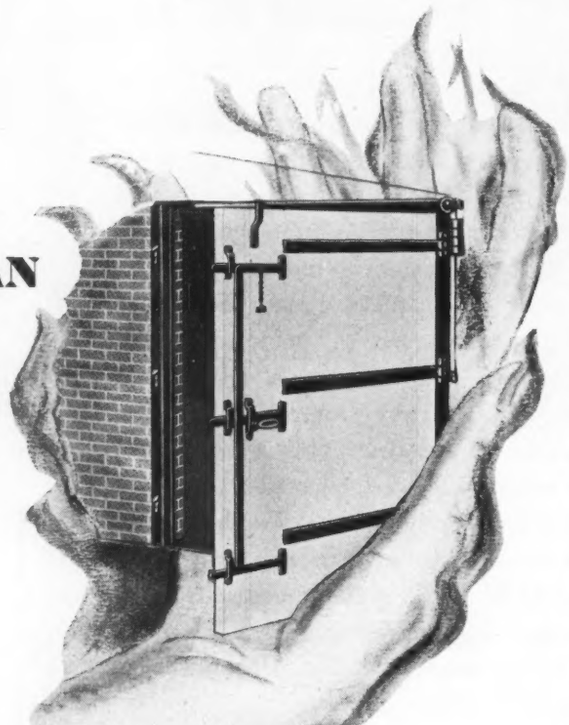
A group of uniformly poor hotels and hospitals is illustrated and, with the strained atmosphere of a first look at a new thing, there is commentary on the Forest Products Laboratory House and on a row of demountable houses in California. Showing a marked prejudice toward prefabricated or demountable units the housing in Washington and Oregon for the war is covered. Acclaimed as the superior plan is a group of nondescript houses on curved roads. These seemingly win favor because they are permanent buildings. In truth they are probably far from that and we hope will be declared inutile before they make a new slum district some three years after the war.

As usual, the merit of this magazine lies in descriptions of ingenious wood substitutions in long-span building. The work illustrated concerns a navy blimp hangar and drill hall.

Canada

JOURNAL. The Royal Architectural Institute of Canada (July, August Issues). John B. Parkin writes about "Tomorrow's Schools"—saying that it is now the architect's duty to question the regulations concerning standard school requirements since, to cite just one example, one area will require that fifteen children be allowed for

SILENT WATCHMAN
against spreading fires



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YES, MRS. BENEDICT, YOUR WAR HOME IS COZY AND COMFORTABLE

THIS is the living room in the home of Mrs. Lauren Benedict, Bristol Terrace, Bristol, Pennsylvania, as she arranged and decorated it.

Although Bristol Terrace was built to provide temporary housing for war workers, Strong-Bilt Panels have provided beautiful enduring interiors *within* the low-cost specifications of the Federal Public Housing Authority.

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In the same way, Strong-Bilt Panels will make a big contribution to the beauty and utility of postwar homes, both conventionally built and prefabricated. *Drybuilt full-wall construction* with Strong-Bilt Panels produces *crackproof* walls with efficient insulating value.

For booklets which will be helpful in utilizing Strong-Bilt Panels in your own postwar plans, write The Upson Company, Lockport, New York.

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An ill-housed worker is an inefficient worker

The unprecedented proportions of America's war program has demanded that war workers be properly housed.

FPHA has come to the rescue. It has provided in a hurry, adequate low-cost shelter for more than 2,000,000 people.

(Continued from page 20)

each lavatory, while others allow eighty to use the same facilities. No longer is it as simple as of old; the architect must now concern himself with improvement of the program to the best of his knowledge and he must make that knowledge part of his equipment. Mr. Parkin's Sunnylea School in Etobicoke, William Lescaze's high school in Ansonia, Connecticut, and Hans Brechbuhler's Technical School in Berne, Switzerland, point up the article. "Book Reviews" praise highly the book, *Brazil Builds*, published by the Museum of Modern Art.

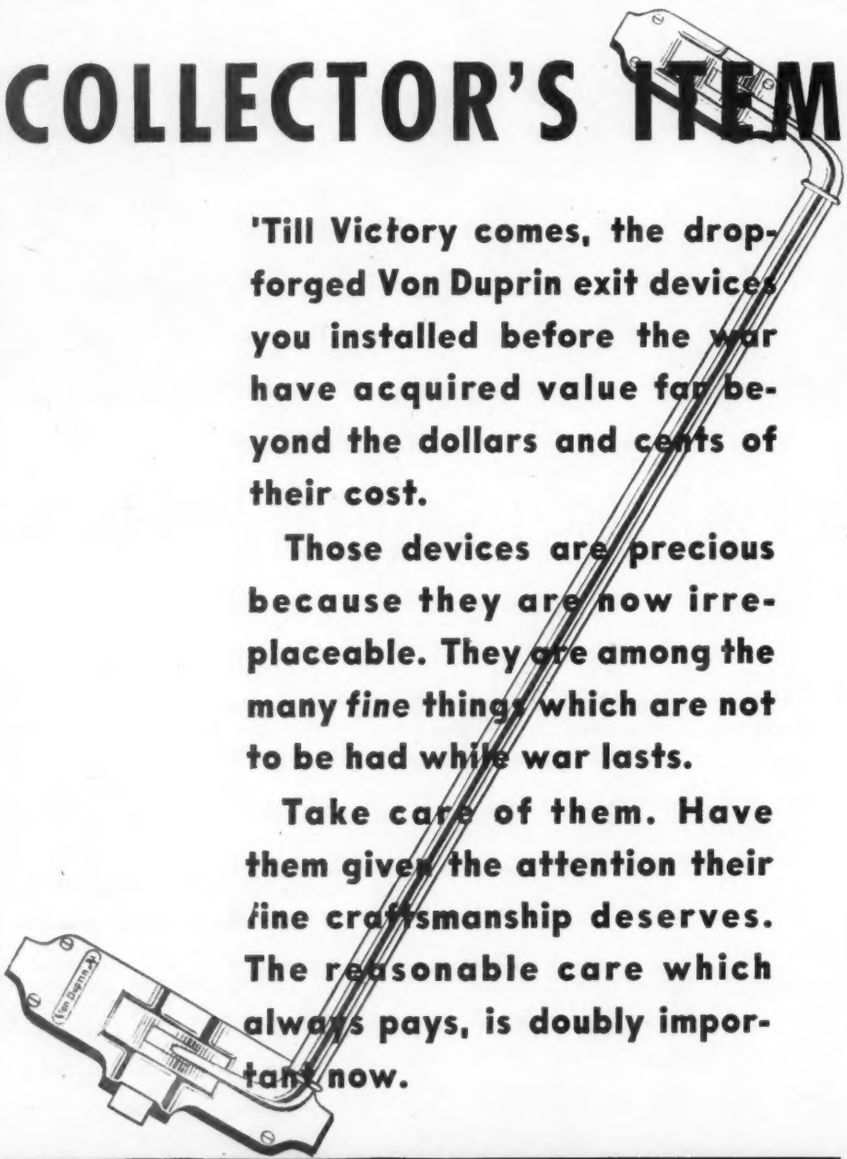
(August Issue). In covering buildings done for the armed services of Canada this issue shows a very clean cut Y.M.C.A. chapel in Iceland by Captain Donald A. Goldfinch, but the remainder of the material of both army and navy is as dreary as our own U. S. ENGINEER, etc. and otherwise officially produced buildings. Little Norway, the camp of the Norwegian Air Force, is a group of log cabin constructed buildings, a technique as traditional as our Cape Cod type of building and as out of place today as the latter. It is unfortunate when one considers the development that has taken place in some parts of Norway.

COLLECTOR'S ITEM

'Till Victory comes, the drop-forged Von Duprin exit devices you installed before the war have acquired value far beyond the dollars and cents of their cost.

Those devices are precious because they are now irreplaceable. They are among the many *fine* things which are not to be had while war lasts.

Take care of them. Have them given the attention their fine craftsmanship deserves. The reasonable care which always pays, is doubly important now.



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Planning Bibliography

Sixth in the series of annotated bibliographies of planning literature, by Margaret Greenough King.

The Niagara Frontier Plans For Peace

National Committee on the Housing Emergency, Inc. 512 Fifth Avenue, New York. June 1943, 25c. This report of the Niagara area in New York states the aims and accomplishment for the year in this area. Feeling that no planning can be done without knowledge of employment conditions after the war, much thought has been given to the private industry of this part of New York State as being the support of any public works or housing projects. Organized in January, 1943 with the aid of the farsighted NRPB, the program is much the same as that of many other planning groups. By its presentation here and by its obviously unconfused organization it promises to fulfill its hopes to a great degree. Fortunately the group presents its studies not as archives, but as a means for translating research into action.

Since Buffalo is the largest city in the area and has many of the most important industries, an intensive study has been made of its existing characteristics, the menace of decentralization, and its potentialities. Excellent charts accompany this discussion.

Bibliography on Postwar Planning

Compiled by the Construction and Civic Development Department of the Chamber of Commerce of the United States, Washington, D. C. August 16, 1943. This recently published bibliography, though it is probably not absolutely complete, is an excellent reference for planners since it attempts to cover all magazines and planning broadsides as well as books on the subject.

Markets After the War

An approach to their Analysis. Department of Commerce, Bureau of Foreign and Domestic Commerce, Washington, D. C. March 1943. This publication is "designed to assist marketing analysts in setting their sights on a common goal of postwar opportunity for American business." Business is urged to plan now to secure full employment and by this employment better conditions under which to produce.

Taken into consideration is the accumulated purchasing power during the period immediately after the war when there will be scarcity of materials, and the lack at the present time of an adequate system for predicting markets. Included are tables, charts, company predictions, to help manufacturers estimate their position in the postwar period.

(Continued on page 98)

The American House

A lot of twaddle has been written and printed recently about the postwar house. In any newspaper or magazine today we are likely to find it pictured by some over-imaginative reporter as a miracle of mechanical, electrical, and chemical ingenuity that will afford completely effortless living at a cost within easy reach of the low-income family. In another place we may read where a solid citizen, both feet firmly planted on his real estate, thumbs in the armholes of his vested interest, solemnly predicts a complete return to the "normalcy" of the Cape Cod Cottage.

Of course, the postwar house will be both of these things—and neither. It will be as various as the tastes and understanding of our people are varied. Many an architect will be called upon to "design" reproductions or popular approximations of Colonial or English or French or other types of houses built long ago in distant places to meet entirely different conditions. At the same time, there will be plenty of opportunities for creative spirits to reach out with daring experiments in space arrangement, freshly invented constructional systems, and the free use of newly available materials. Somewhere between these extremes will lie the average. Whether the average moves up or down in the course of the coming years will depend on the amount of life that pulses through the profession of architecture. We are betting it will move upward.

To help raise the average it is our duty as a professional magazine to throw our weight toward the side of progressive design. Thus we devote most of our space to houses and other buildings that show advanced thinking rather than the reverse.

We, too, have our sentimental side. We can admire and thrill as much as any man at the magnificent specimens of architectural art dating back through the centuries. We have felt the charm of the Cotswold cottages, the provincial homes of France and Spain and Sweden, the small houses and mansions of our own Early American and Georgian era. All these things are known and loved for what they are—expressions of the life and times that produced them. We see, however, no valid reason why American architects of today should be content to continue indefinitely to reproduce or adapt their forms into the new buildings they design for our own times. We believe they can do better than that.

We are glad that our young men, and some not so young, were developing—before the war and even during it—a direct, honest, and unpretentious residential architecture, expressive of today's modes of living in the United States, free from the affectations of stylistic thinking, built economically of the best available materials both natural and synthetic, equipped with the products of American invention and manufacturing skill. What they are producing is not a "style"—it is Architecture, and it is American.

Architecture is a universal art, practiced with varying degrees of skill by all mankind throughout history. Its processes of analysis and synthesis are common to all who build or have built purposefully in all lands and at all times. It has a international basis for its thinking. Yet its end-products, buildings, are and should properly be as different as the regions of the world and the needs of their inhabitants are different.

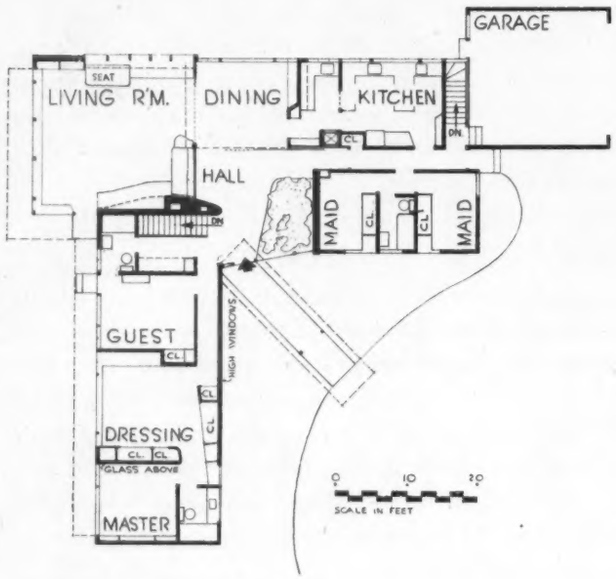
What we should seek, therefore, is neither an International nor an American "Style" with earmarks and details to be copied by the unthinking in all corners of our country. What we must look for is a true Architecture, expressive of the needs and conditions of the localities that call it forth. And insofar as each locality within our borders is in its own way American, the architecture will be inexorably American. Its qualities of greatness or mediocrity will be a measure of our culture.

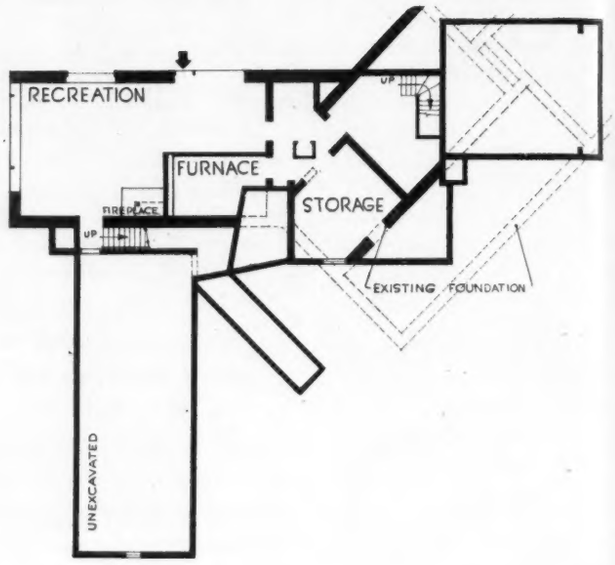
We are not afraid to leave the future of the American house in the hands of the rising spirit of American youth.

Kenneth Reid

Contemporary Home Replaces Expensive Victorian Mansion

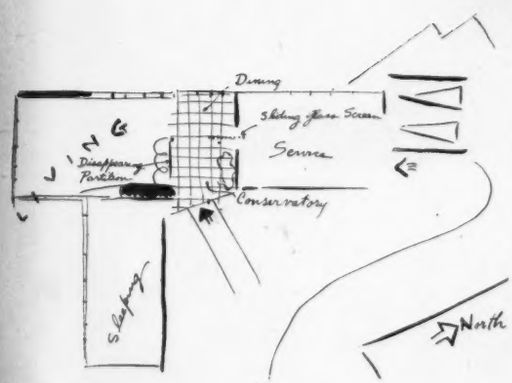
Carl Koch, Architect





All photos by Ezra Stoller

Conservatory hall has exterior wall of glass, skylight above. Stone floor extends into dining area. Conservatory planting was designed by Christopher Tunnard, who also devised landscaping which has not yet been fully realized.



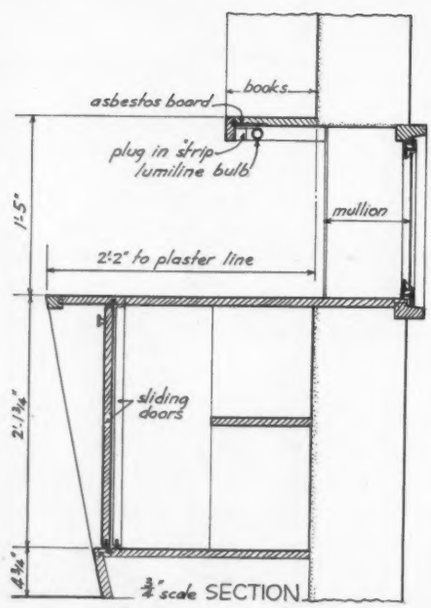
Living room, dining space, and conservatory-hall can be thrown together into a single living area or subdivided by a curtain, a glass screen which slides horizontally, and a wood partition which drops down to the cellar. Fluorescent tubes in cove at darker end of living room provide low-intensity general lighting; other special fixtures are used in dining space. All fixed sash are glazed with special heat-resisting glass.

Mr. and Mrs. George Wallace, of Fitchburg, Massachusetts, wanted a home which would be comfortable to live in, easy to maintain, and would, as the saying goes, "work" in every respect. They were not interested in pretension; they had raised a family in one of those large Victorian houses that provide plenty of space without convenience. They had a good-sized plot of ground, on which stood the many-roomed monument to the house builder's art plus a large garage.

They were typically American in their desires, and were financially able to satisfy them. Their house reflects them: it is as open as they are open-minded; hospitable, sure of itself, un-selfconscious; equipped with everything modern technology can offer in the way of soundly developed labor saving devices, yet never blatant.

That is why this description starts with personalities, and with the inside of the house first. In looking at pictures and plans of it one cannot help but become acquainted with Mr. and Mrs. Wallace. When one realizes how well everything in it is coordinated—plan relationships, use of flowing space or segregated area as needs dictate, structure, lighting, heating, plumbing and all the array of modern gadgetry which serves without obtruding—one understands how close this house comes to being the ideal solution for this particular case. It neither strains for effect nor rubbernecks wistfully at a past architectural style. It will be a hard house for the unimaginative to copy, but it may be in some measure inspiring.

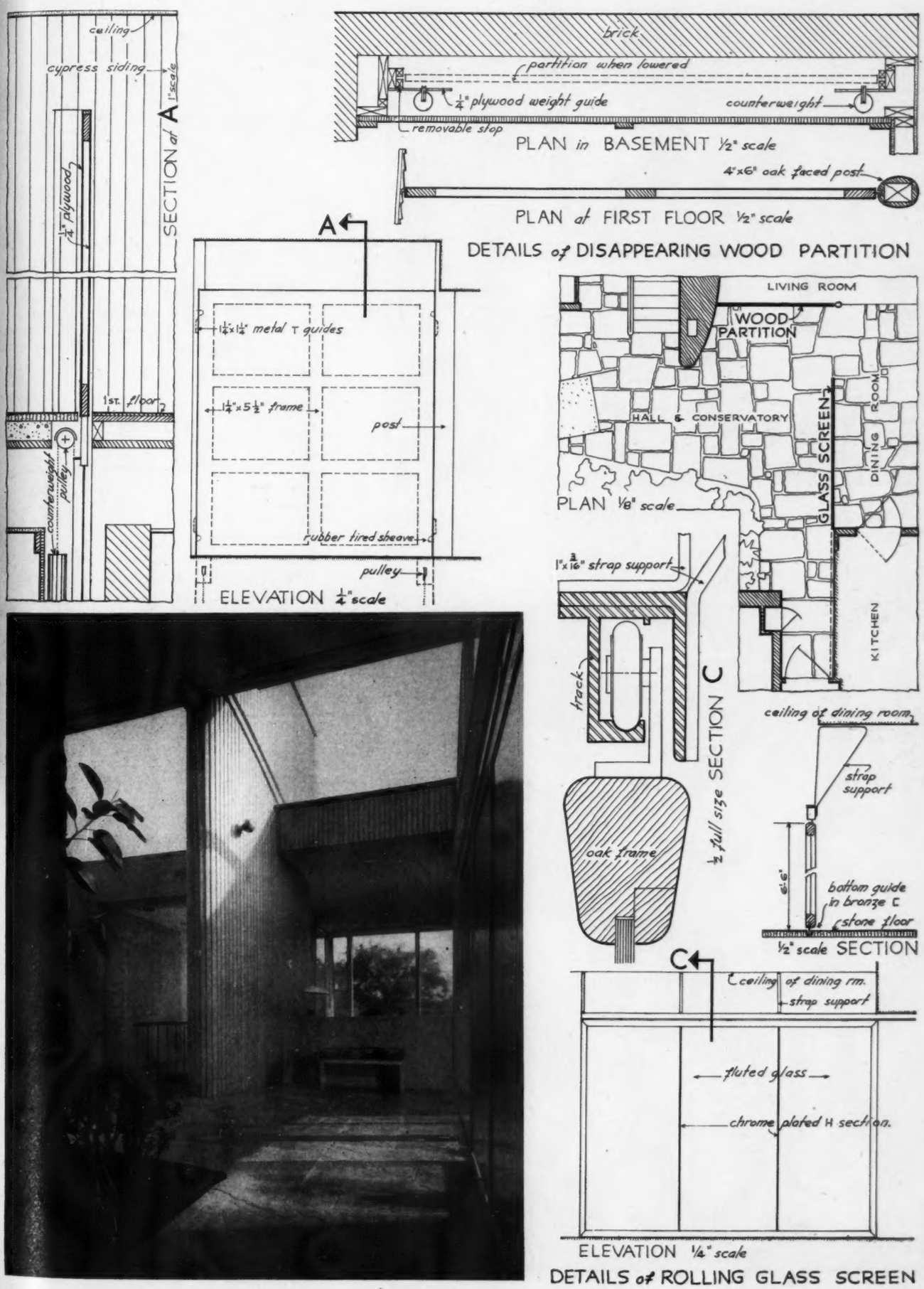
The Victorian mansion and the garage were razed. The plot, too large for the Wallaces, was subdivided into four sections. On one of these, on the foundation of the garage, the new house was built. The owners wanted everything on one floor, with no changes of level. Mr. Koch tells us they likewise "had the usual desire for simple maintenance, etc. Other main considerations were provisions for a fancy radio with hookups in several parts of the house, and a combined study-dressing room." He modestly neglected to point out the extreme simplicity of the result.



Record cabinets, built-in radio, phonograph, and couches were designed by the architect, who also designed the beds, dressing cabinets, and similar furniture. Dan Cooper did many of the remaining pieces, and L. L. Rado is responsible for some. Some sash between bookshelves and radio cabinets are fixed, some openable. Fixed units consist of double thicknesses of heat resisting glass. Sash are steel. The picture window at the end of the room extends across its entire end, and can be covered by drawing the simply hung curtain.

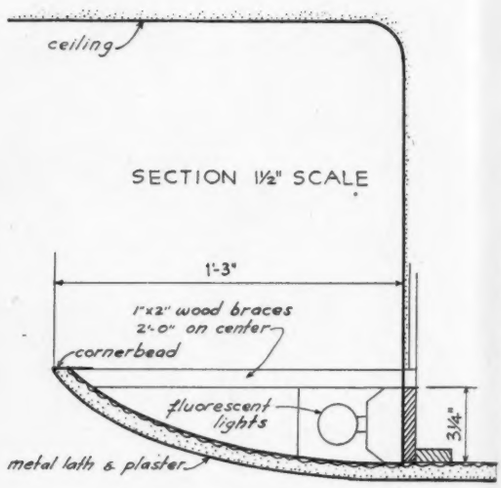
Notice, in the drawing at the left, that the bottom bookshelf houses a continuous outlet strip and tubular incandescent lights.

Selected Details: Curtain and screens permit a single large living area to be subdivided into living room, dining room, and conservatory-hall; Wallace House, Fitchburg, Mass. Carl Koch, architect.

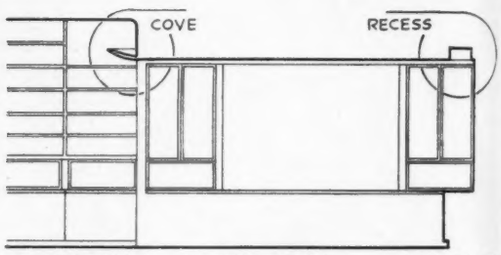


Selected Details: Special lighting fixtures replace portable lamps; Wallace House, Fitchburg, Mass. Carl Koch, archt.

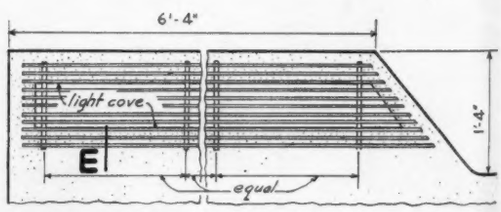
Above, cove light at end of living room, with dining area beyond. A flush ceiling fixture is centered over the dining table. Built-in buffet with mirror back, at far side of dining area, is also shown below. Over the buffet is another built-in lighting unit.



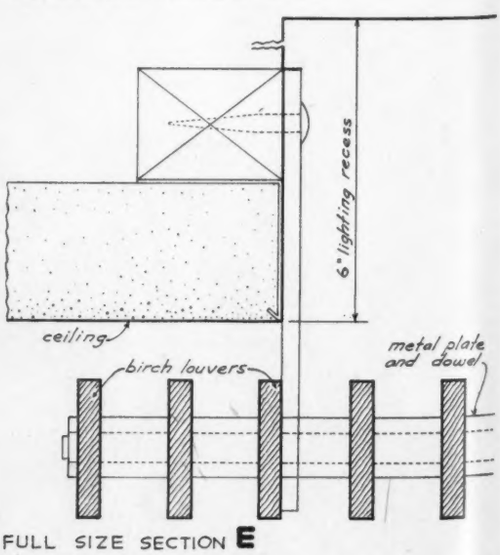
COVE LIGHT IN LIVING ROOM



SECTION



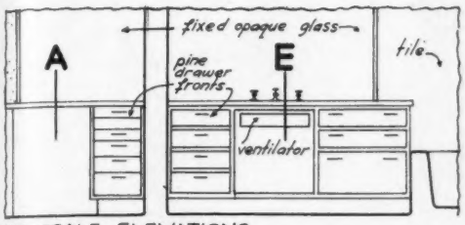
REFLECTED PLAN ½" SCALE



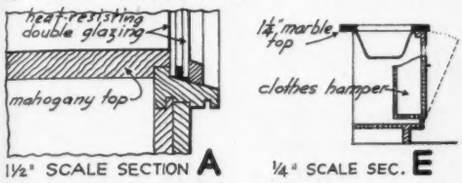
FULL SIZE SECTION E

RECESSED LIGHT IN DINING ROOM

Selected Details: **Built-in Furniture, Dressing Room and Study, Wallace House, Fitchburg, Mass. Carl Koch, architect.**

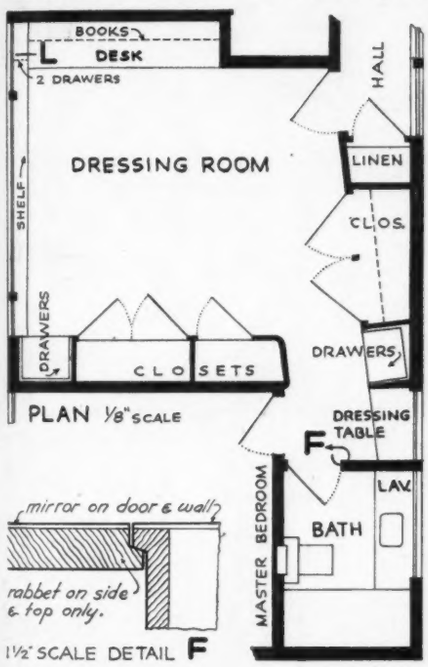


½" SCALE ELEVATIONS



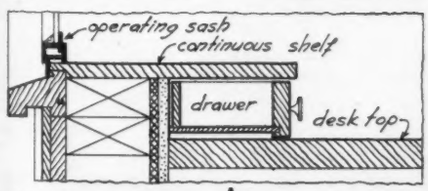
1½" SCALE SECTION **A** ¼" SCALE SEC. **E**

DRESSING TABLE & LAVATORY

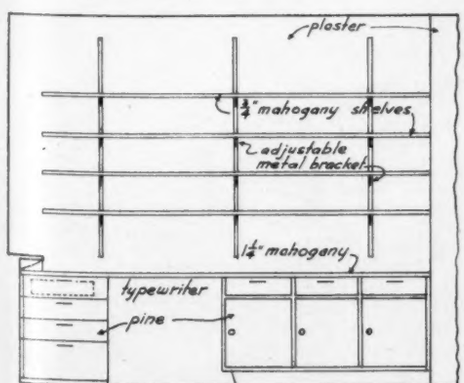


PLAN ⅛" SCALE

1½" SCALE DETAIL **F**

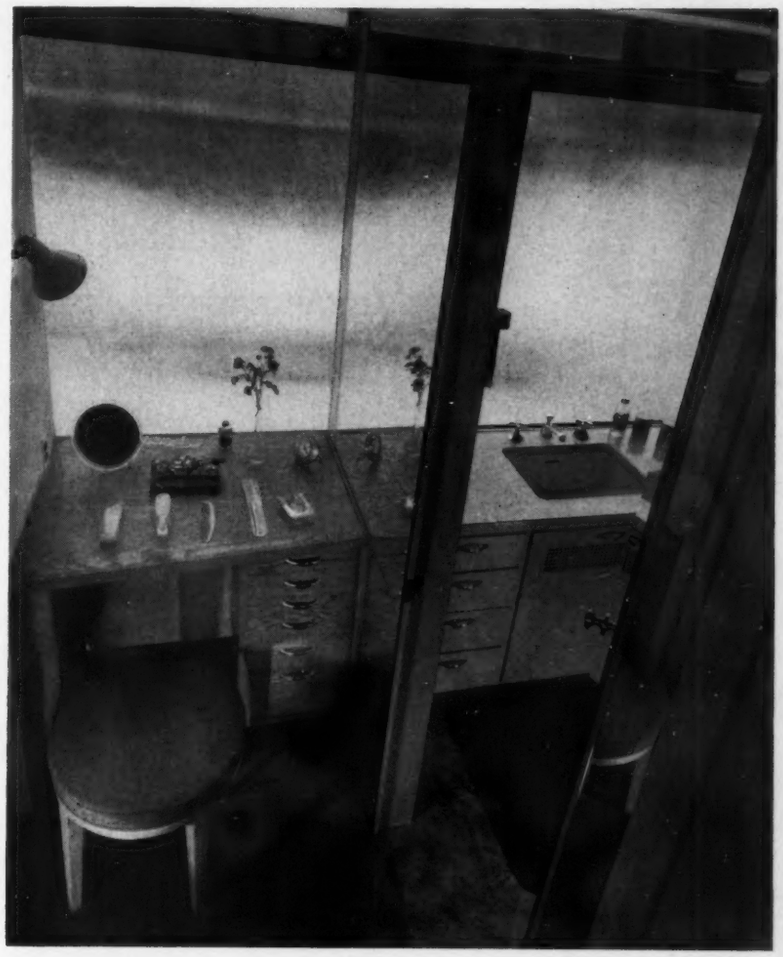


1½" SCALE DETAIL **L.**



ELEVATION ¼" SCALE

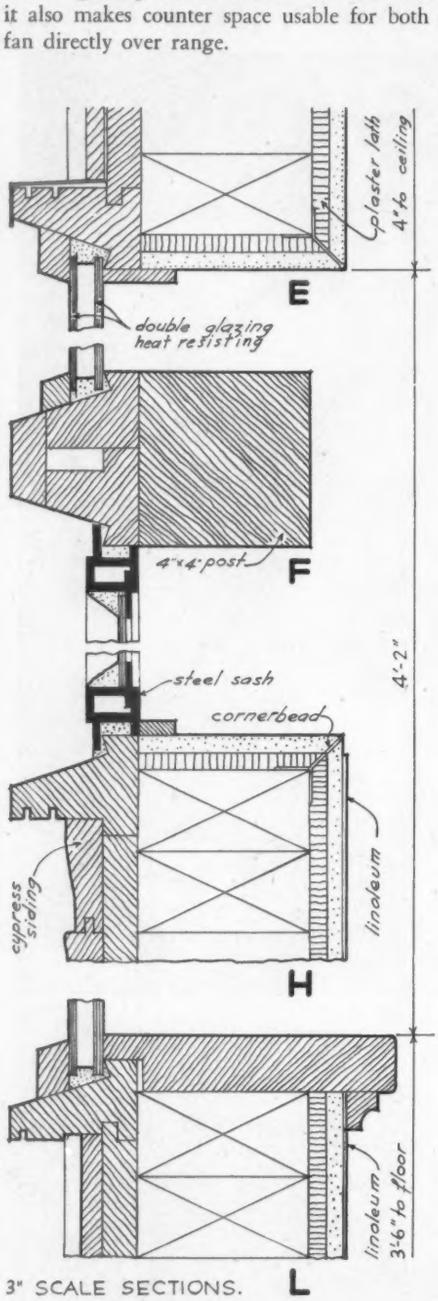
DETAILS OF DESK



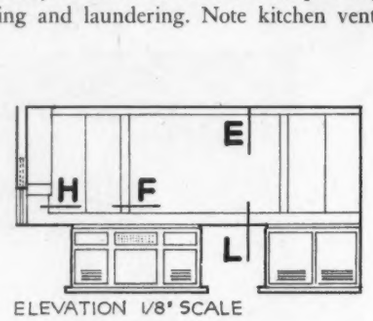
This dual-purpose room is between two bedrooms, quiet and secluded. Dressing table window is translucent, provides excellent natural light.

Selected Details: Kitchen and laundry, House for Mr. and Mrs. George Wallace, Fitchburg, Mass. Carl Koch, Arch.

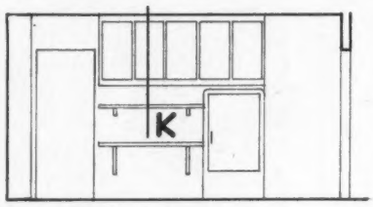
Standard units were organized into the unusual kitchen-laundry shown on this page. Omitting the partition between the two rooms not only makes them seem more spacious, it also makes counter space usable for both cooking and laundering. Note kitchen vent fan directly over range.



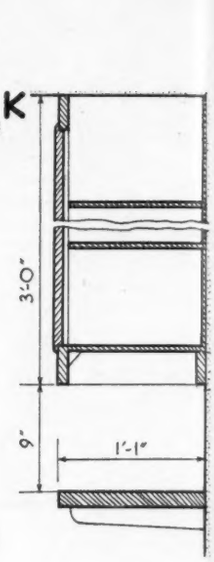
3" SCALE SECTIONS.



ELEVATION 1/8" SCALE

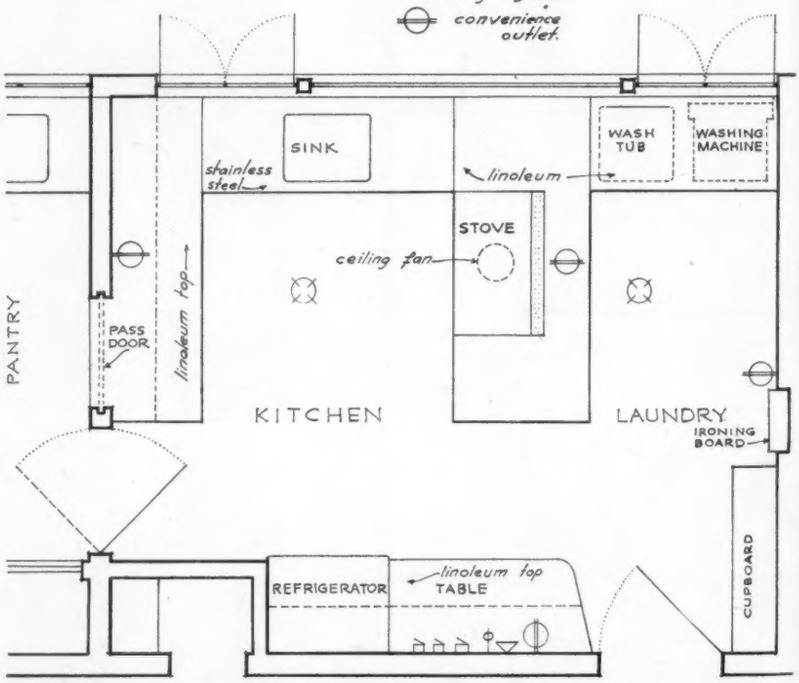


ELEVATION 1/8" SCALE



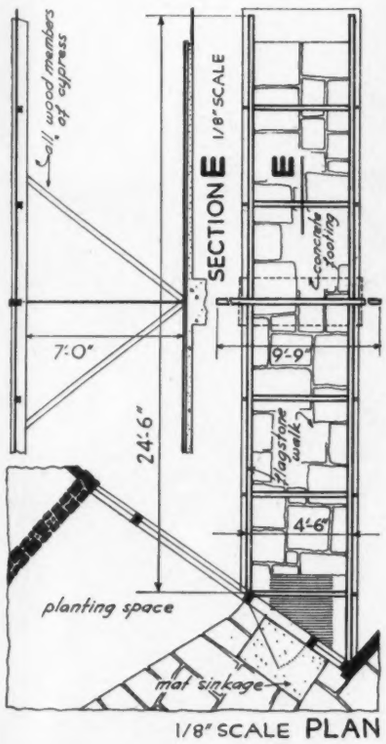
ELECTRIC SYMBOLS

- push button.
- buzzer bell.
- telephone.
- fluorescent ceiling lights.
- convenience outlet.

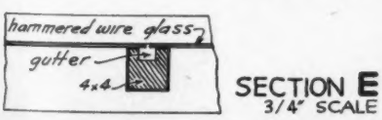


PLAN 1/4" SCALE

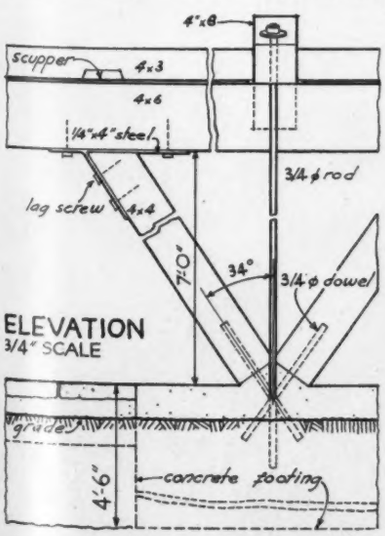
The owners wanted a porte-cochere to extend from the driveway to the front door. This door is glass, set in a wall glazed with heat-resisting glass, all of which admits sun to the conservatory-hall. In order to obstruct as little light as possible, the porte-cochere has a wire-glass roof which is supported on a wood frame.



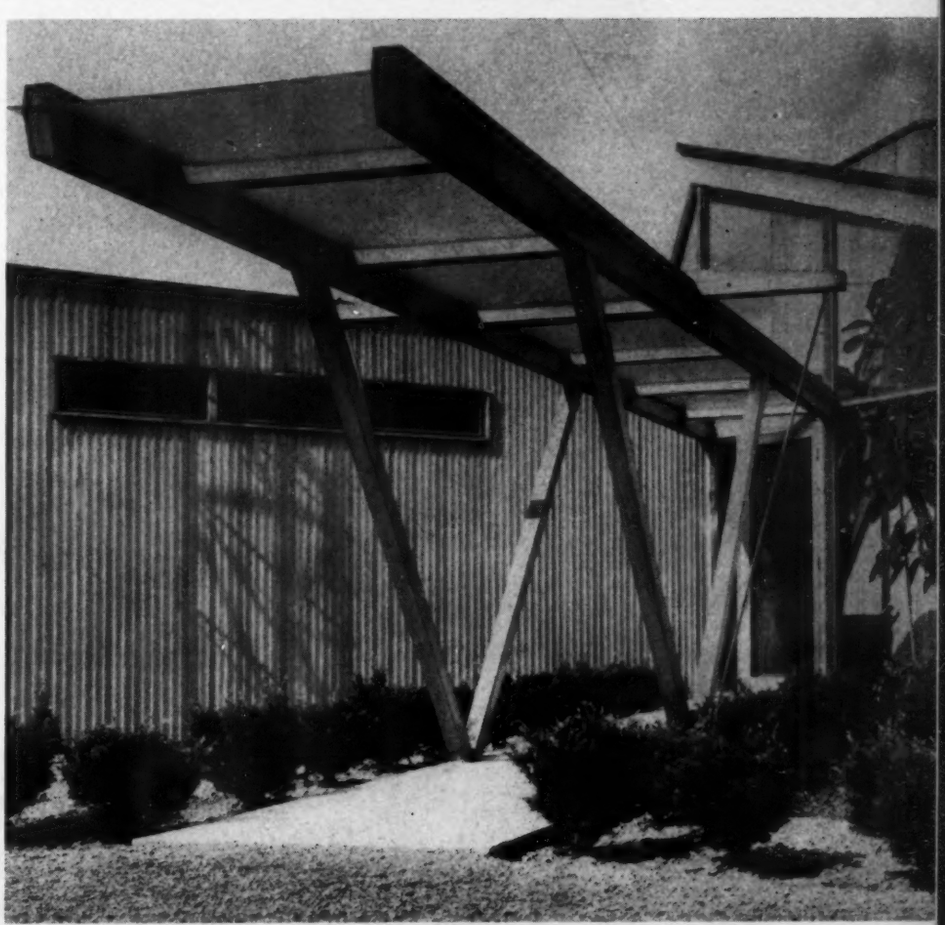
1/8" SCALE PLAN



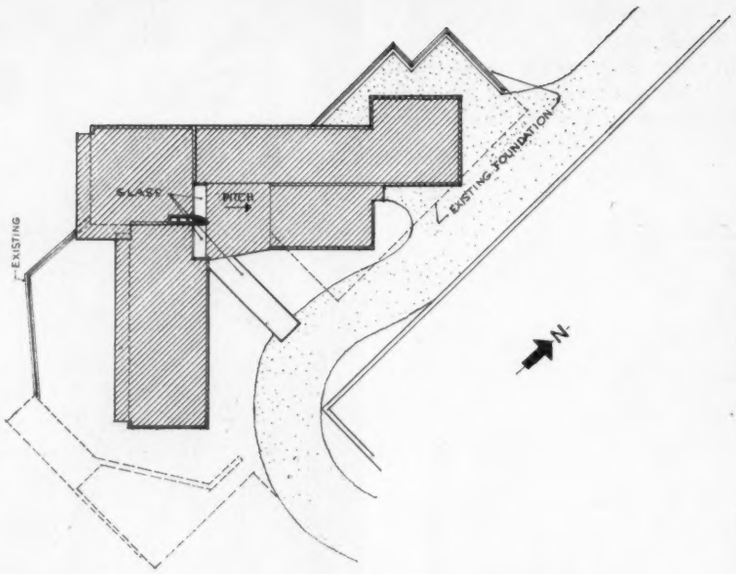
SECTION E
3/4" SCALE

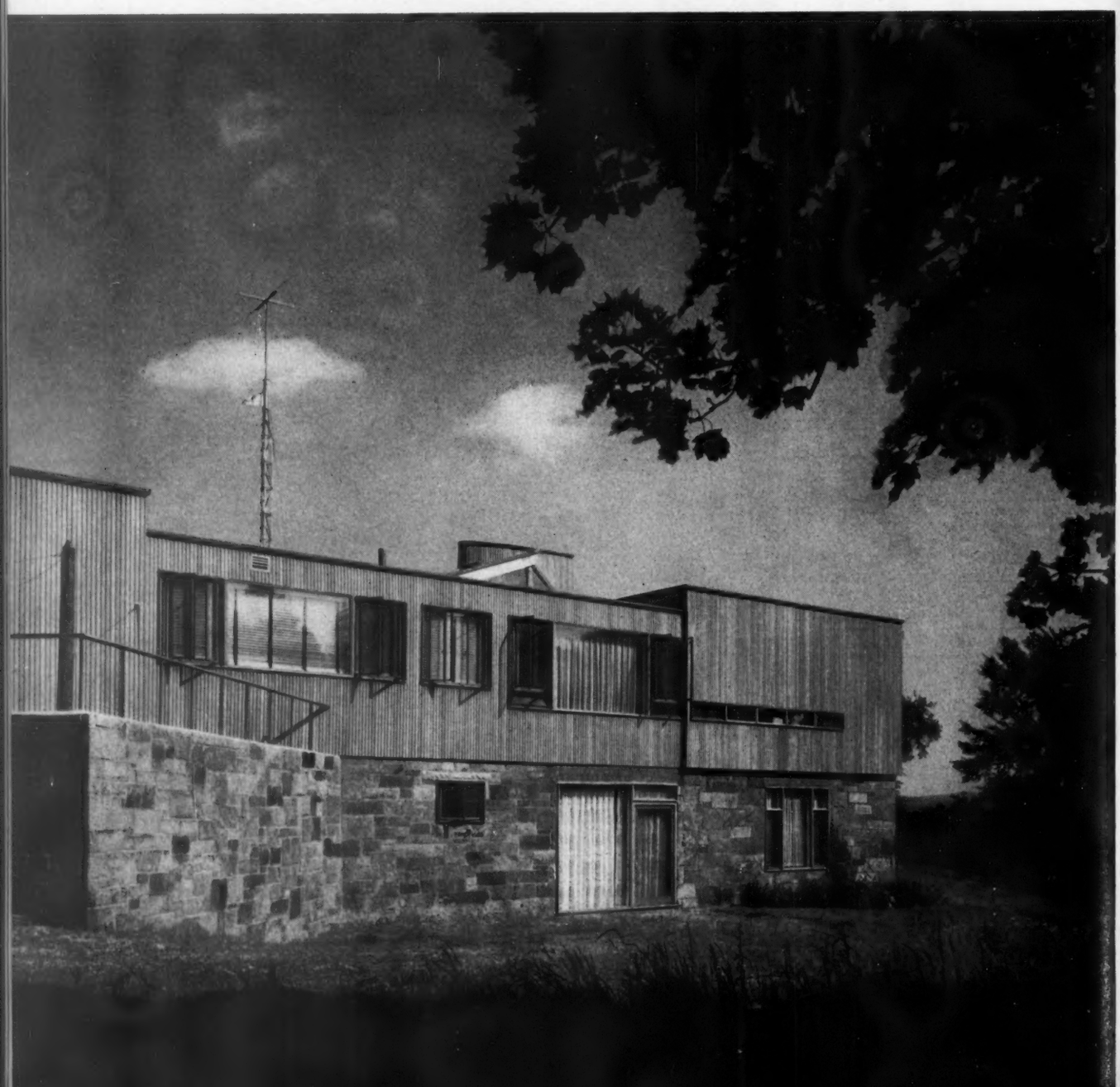


ELEVATION
3/4" SCALE



The site, as the photographs show, has several changes of level. Windows and door at lower floor, shown in the photograph below, indicate the position of the recreation room—the only part of the living area which is not at first floor level. The existing driveway was used for the new house. A special antenna was provided for the built-in radio. Note the clerestory, or skylight, which was necessary for the conservatory-hall.





Terraces were made of the existing garage structure; above is the terrace adjoining the bedroom wing. Outside as well as in, the house is extremely simple. It is faced with vertical-grain tidewater cypress boarding, on the exterior, over stud framing. The boarding is specially molded, and is also used to face the chimney and fireplace breast in the living room. It is slightly tinted with a special finish. The roof is built-up, with a 15-year guarantee.

Walls and roof are insulated with mineral wool, 4 inches thick at the roof, 2 inches at walls. Interior wall and ceiling surfaces are finished with insulating plaster containing expanded mica. The stone floor in hall and dining area is Tennessee Crab Orchard. Openable sash are steel easements; all fixed sash have two thickness of heat-resisting glass, set in wood frames. In bath and kitchen, the floor is surfaced with linoleum; there is wall-to-wall carpeting in the living room.

The kitchen-laundry is equipped with stock cabinets, laundry machine, built-in ironing board, garbage disposal unit, and mechanical refrigerator. In addition to the specially designed lighting fixtures, there are some stock units, including one near the fireplace, in the living room, another over the dressing table, and several others. The garage doors are operated by a radio remote-control unit.

post-Victory houses must work

by Frank G. Lopez

Where Can We Go from Here?

We have gone a long way, here in America, in producing the materials and equipment which can help to make houses comfortable to live in and easy to maintain. Now we are being told that the postwar house is going to be entirely different. We also hear that it's to be much the same. Who's right? Why all this sudden pressure to think of new gadgets for the home—if they are gadgets? Technically, what is our present status and where can we go from here?

To answer the last question first, it should be obvious, to anyone deeply enough concerned to think the problem through, that we *can* go anywhere. The ingenuity fostered by this war, the development of new products to replace those which war denies us, the desire for equipment to do all kinds of things undreamt of in peacetime, and the great increase of manufacturing space—plus accelerated development of machines and trained workers—all make it not only possible but imperative for one of our greatest basic industries, the production of shelter, to advance scientifically.

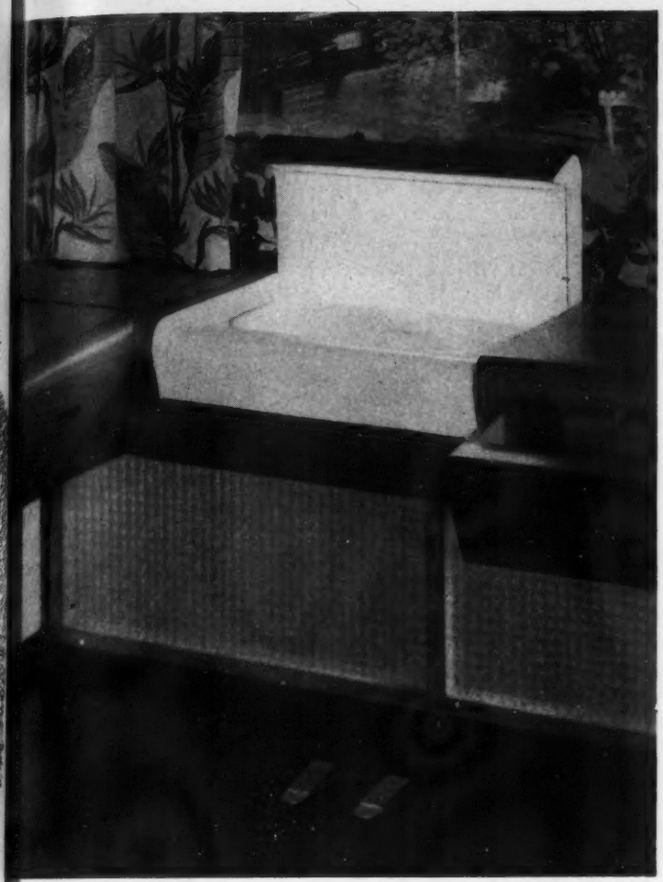
There are other factors, rooted in prewar conditions. Even before 1939 our great mechanical productive capacity outran the absorptive capacity of our homes, as they were ordinarily conceived and built. We tried continually to put into a house whose shell was conceived in Colonial days the comforts made available by 20th century technology and productivity. Also, by putting into reasonably successful practice the democratic principle of equal opportunity for all citizens, we increased the general social desire to possess the luxury items at first available only to the wealthy.

One result was that America provided more mechanically comfortable homes in proportion to its total number of families than almost any other country in the world. You have only to compare figures for sales of heating, plumbing, and electrical equipment, of gas and electric current, of washing machines, refrigerators, and the like, in relation to population, to believe such a statement. For a while we worried less than others about citizens who could not afford a high degree of comfort. We may have had fewer of them, relatively; but eventually the contrast between those who could and those who couldn't became so great that we dared not ignore it. Now we must worry about them, even in wartime, because we are awakening to the fact that low standards for the "have nots" can seriously affect the high standards of the "haves." Maybe it can even cost the "haves" some cold, hard cash!

This has a great influence on what we choose to call technical advance in house design, and on the development of products and mechanisms which can aid the architect. Consider the pattern of our development of machine production. We gain by making a small individual profit per item produced, if production is in great quantity. The opening of a vast new market, composed of all those whose homes have for so long been poorly designed, equipped, and built, offers a tremendous opportunity for quantity production. There are many who say that our present system of subsidy to provide adequate low-rent housing is bound to reach a limit sooner or later. There are some who are seriously studying ways for private capital to take over the job. (That there are also enterpreneurs who ride along with housing as the most expedient vehicle to a quick profit is a little beside the point here.)

The point still is that we *can* go anywhere. We face these definite demand factors after the war: *First,* an obsolescent kind of private house in great quantity, some of which must be remodeled to avoid losing a substntial investment; *Second,* an unheard-of number of new private dwellings, to build which there will be both need and funds; *Third,* a certain quantity of new multifamily housing to be provided for the financially able; *Fourth,* a great amount of housing for those we now call under-privileged, in the form of detached houses, multifamily dwellings, dormitories, etc.

Such is, we have every reason to believe, the postwar market. Is it going to be satisfied with types and kinds of equipment and products we have been used to in the past?



Hedrich-Blessing

The latest things in kitchen sinks: On facing page, in 1885; on this page, 1943. The 1885 sink had a huge flushpot beneath it, in which several gallons of waste water was accumulated and then released by a pull on a plunger extending up through the sink strainer. Object was to flush out grease. The 1943 sink was designed for a glass manufacturer, for a kitchen in which glass was put to work in a modern way. This sink has foot pedals instead of faucets, and, like other counter-height units in the kitchen, a lift-up top which houses a concealed light.

What's New?

We have been bombarded with pictures of the shape of things to come until we're a little bewildered. Of materials, we are told we will be able to use many brand-new to house-building, such as "plastics," and many more which have changed their form, such as wood, metals, or glass. Of equipment, we hear most about refinements on existing products, plus an occasional new way of satisfying the old need: a free-standing refrigerator; a gas-fired air-conditioner and cooler; a less costly electrical system; or a more efficient range.

Of one subject we have heard less, although a few manufacturers and magazines have paid it public attention: *The relationship between these "new" developments and good house design.* This is regrettable, because a house design which does not take full advantage of the best materials and equipment available restricts the desire for the best our technology can produce, hence limits sales, which limits production, which limits the possibility of wide distribution at low cost, which, ultimately, affects adversely our national standard of living.

We cannot consider the new products by themselves. We must consider them in use, *full* use. We must have homes designed to take advantage of the products of our ingenuity.

What's new? is a question which, in the long run, will be answered by the people who will do the buying. What they ask for will be what's new; and it is within the power of the building industry to make them ask for whatever the industry chooses. However, the buying individual can ask only for the products and equipment with which he is familiar. Education, to enable him to understand what is available, comes to him both from the building industry—manufacturer, builder, financier, and architect —and from his experience in other fields.

Savings of war-swollen incomes; use of increasing numbers of women in industry; experience of both men and women with new industrial environments (air conditioned plants, better light, for example); and the broader experiences of many men and women in our armed forces, who are learning to live according to foreign, unfamiliar standards—these are some of the influences which may stimulate appetites for home environments better than those generally available in the past.

The manufacturer—through his readiness to accommodate the buyer, through research into ways of using in times of peace the products-for-war, and through further stimulating the public to expect something brand-new, come peace—is contributing to the buyers' education even now. A few builders appreciate the prospects, and are adding their contribution. Many architects are doing so. Of those who finance home building, apparently not so much can be said; it is hard for men trained to evaluate a home in terms of the familiar to appraise new developments and the buyer's satisfaction with them. Building codes likewise are in general arbitrarily prohibitive of untried equipment and techniques of building. Those who formulate codes, control financing, and, to a greater or lesser degree, those who build, would seem to be in need of some of the "education" which has to be directed at the home-buying public.

The team to do this consists of the architect, who should be able to coordinate all these up-to-date materials and equipment into designs which will satisfy our way of living; and the manufacturer, who is bound by the nature of our economy to develop markets for his productive capacity. The architect's principal educational tool is the example of his work—project, completed house, or housing development of one kind or another. The manufacturer's tools are many: example, not only in demonstration houses but also in wide distribution of his products; advertising, that force which is often poorly applied, occasionally well used; and the mere fact of production which increases wealth and so generates a public capacity to absorb the product.

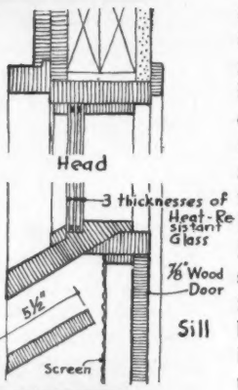
Well Then, What Kind of House?

We laugh at the first automobile, but we revere the Colonial house. We have a superior sort of affection for Bell's first telephone and we passionately defend Tudor, bastard Spanish, French, and Real-Estaters'-Shoebox styles of domestic architecture. Something's unbalanced when in one walk of life we perfect Radar and domestically revert, like St. Simeon Stylites, to the column or its equivalent.

Instead of probing for the reasons for this situation, suppose we examine the kind of house which can truly be considered up-to-date. Take the question of heating and its effect on house design as a starter.

Heating

The word heating is used only because it is well understood; actually the subject, as any architect or heating engineer knows, involves questions of air-flow, air-cleanliness, radiation, convection, insolation, thermal insulation, condensation—and many others. This is true in the house that is *not* air-conditioned as well as the



Fixed windows, of three thicknesses of heat-resisting glass with air spaces between, make it possible to use great expanses of glass even in northern latitudes. For ventilation, George Fred Keck, Chicago architect, provides louvers below with inside, bottom-hinged doors. Above, interior with ventilator open; below, ventilator closed, and view from outside.

house that is; else we would not make it a practice to locate radiators near windows, where advantage is taken of induced convection currents, nor would department stores sell water-containers to hook over radiators.

In a recent decade many a realtor sold a house partly because it had a sun parlor, so called. Carry the idea to the extreme and you have a house with a south wall of glass—and the glass-manufacturer goes into the heating business willy nilly. The sun, whose uncounted ergs of energy have been little used indoors, becomes an ally of the fuel-distributor (ally rather than competitor because the more efficiently fuel burns the more people will make full use of it, and so broaden the market). But in summer the sun may penetrate this glass wall with uncomfortably hot results, and in spring or fall sun penetration may be desirable to varying degrees. Perhaps an extension of the eaves, or some sort of movable louver, to admit just the desired amount of sun, is the answer. The roofing material manufacturer and he who makes the louvers get into this "heating" picture.

No matter to what degree insolation is employed, heating systems are going to be necessary in houses in most parts of the United States. They will have to be more efficient than those we know now. Our tradition of mechanical progress demands this. Shortly before the war, heating engineers were beginning to discover curious, stimulating things. Given certain conditions as to dryness of atmosphere, rate of air-motion, and type of heating medium (radiation, convection, or actual heating of the air) the then "normal" indoor temperature of 70-72° could be considerably lowered and yet comfort could be maintained. Perhaps the ideal heating system, to which the postwar house can aspire, is not solely air-conditioning, not just radiant heating; perhaps eventually it may be a single plant which supplies dried air to kitchens and bathrooms (where normally there exists much vapor from combustion, cooking, laundering, and bathing), humidified cool air to the conservatory and food storage closet, and air of proper temperature, rate of motion, and humidity—plus a certain amount of heat by radiation—to parts of the house designed for eating, sleeping, recreation, and the like. Perhaps there should be a switch to flick in each room, to control each factor according to the use being made of the room. A large lively party in the living room generates heat and the room gets stuffy. Open the windows and somebody gets a chill. But flick a switch or turn a dial and the quality of heat and air in the room changes magically. The controls to do just this can be produced with no more knowledge than we now possess; but the market for them has to be stimulated before it will come practicable to produce them.

Many developments were available, some at too high a price for average use, shortly before the war. Others have only recently been announced. These include a refinement of the familiar "hot air" heating system, with blowers and efficient heating units, ducts, and registers; announcement of the application of electronic developments to heating controls; publicity on a carefully tested gas-fired winter air-conditioning and summer cooling system; design of a system, intended for multi-story buildings, which carries clean, humidified air from a central plant through cast iron pipes to individual rooms where local units temper it to local needs. Steam and hot water systems have been refined, the latter with the addition of circulating pumps which help to overcome the heating lag which was once an objection to it. There have been numerous trials of radiant panel heating; and proposals for using electricity, steam, water, and air for heating the actual structure—floors, walls, ceilings, or all or part of them in combination.

Much heat may be lost through glazed areas. Use of heat-resisting glass, whose efficiency is sufficient to reduce losses yet not so great that it inhibits insolation, may be the answer. Losses of this type have been cut tremendously by using two or three layers of such glass with dead air spaces between. Heat is also dissipated through the structure itself, and use of thermal insulation is so common it need not be more than commented upon here. After this war and our nearly universal experience with fuel shortages,

it is doubtful if any of us is going to buy an uninsulated home. Some of us realize how similarly important orientation can be to our home heating problems.

All these factors, ranging from heating or cooling method to mechanical means of insuring that heat—or coolness—is not wasted, can be negated by poor house design. A house cut up into too many small cubicles, or spread out without organization, is going to be too costly to heat under any conditions. If an open contemporary plan is desirable for a family living in a region where there are severe winters, perhaps removable partitions can be used to simplify the heating problem.

Lighting

Since Americans stopped going to bed when the birds do—which is to say, approximately since modern improvements in artificial lighting have come into use—we have increasingly tried to make the interiors of our homes as bright as the rare day in June. Lighting engineers have advocated, consistently, higher levels of artificial illumination than are in common use. They have also advocated precautions against glare, which exists when a brilliant light source is visible against dark surroundings. We have been cautioned against inadequate wiring which prevents placement of portable lamps where they are needed. We have been sold bulbous lamps and tubular lamps; fluorescent lamps and zeon tubing.

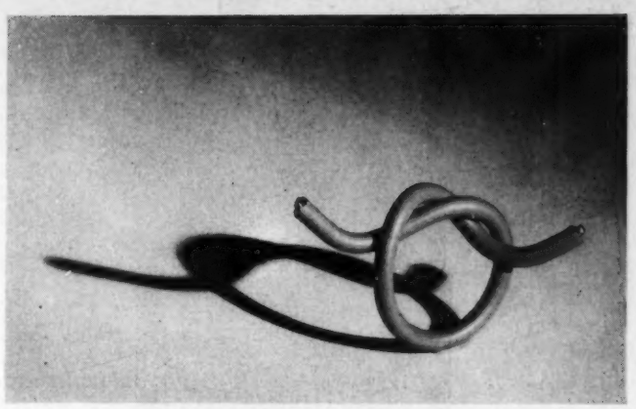
We still buy many pendant chandeliers, or their modern equivalents.

To begin with the current distribution system, we have accepted wire as the conveyor. Maybe it is not the most efficient conductor; perhaps a small diameter metal tube would be better. Certainly a friction joint between lengths of tubing, with one end smaller so it would slide inside the other, would be simpler to construct than our present soldered joint. Imagine a pair of such tubes, properly insulated, around the circumference of a room, with openings at intervals similar to the accepted convenience receptacle. The advantages for portable light placing are obvious. Such a system has been field-tested, and has proved highly satisfactory from the engineering point of view. Voltage drop is said to be greatly reduced; less current is used; fewer expensive connections need be made.

Consider insulation for the conductors. In use on battleships today is a plastic wire covering said to be better in every way than the "rubber" with which we are familiar. Its high dielectric strength makes possible thinner insulation, which means more wire can be pulled through a given size of conduit. It does not lose efficiency as quickly under extremes of temperature or atmospheric conditions. It can be flexed almost continually without cracking.

More directly a matter of concern because they are less efficient are the publicly accepted types of lighting fixtures. It is not so long since each room had its pendant ceiling fixtures; wall brackets gradually "came in," and interfered successfully with furniture placement; when the war became imminent they were in the process of being eliminated in favor of an increased number of convenience outlets—the electrician, in other words, stopped trying to outguess the housewife in regard to furniture arrangement. The householder, often uneducated in matters of lighting, is likely to use too few or too many lamps for his physical well-being, to buy lamps that glare, give him eyestrain, and force him and his children to wear glasses. Surely the specialist (architect and lighting engineer) should not leave the solution of the problem to sporadic educational advertising.

Might not a better answer be to incorporate into certain portions of the house, as most architects do in kitchens or baths and as some do in living areas, sources for relatively low-intensity general illumination, to be supplemented by the portable lamps which would normally be added anyway? In this issue are examples of such "built-in" lighting in living and dining rooms. Fixtures in the accepted sense might also be so used, provided types could



Plastic insulation for electric wiring, because it has high dielectric strength, reduces the over-all diameter; this allows more wires to be run in a given size of conduit. Insulation is non-inflammable, very flexible; has high resistance to abrasion; is not attacked by most acids or alkalies, alcohol, gasoline, solvents, or oils. It strips easily, may be color-coded, and absorbs little moisture. These properties are maintained even in hot, humid climates.

be selected which did not waste an inordinate amount of materials—metal, wood, plastics, glass—*and light,* and which were constructed in accordance with reasonable principles of lighting fixture design. If the praiseworthy efforts of the lighting industry to better portable lamp design were applied to the field of domestic lighting fixtures, a tremendous gain could result.

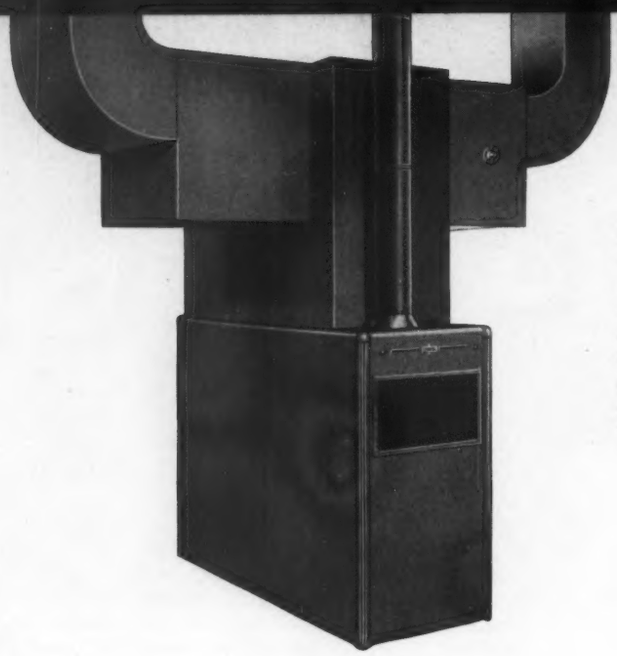
Artificial lighting can no more be considered independently of natural light than heating can be discussed apart from insulation. There is not only a necessity for turning on artificial light as daylight fails. It can, with equipment now at hand, be increased in quantity as twilight deepens, and the great expanses of window in the contemporary home are believed, in one case at least, to reduce eyestrain indoors, *in daytime.*

Suppose, to accomplish the first, we could snap a switch at four o'clock of a winter afternoon. Nothing might happen at first, if sufficient daylight remained. But at four-fifteen one light might come on; at four-thirty, another; and so on. We would have artificial light geared to daylight. Regarding the second question, that of adequate natural light alone, a realtor from the Chicago area tells us that a great selling point with his "modern" houses is consistently the light, bright, cheerful interior. He believes, when light meter tests on his houses are completed, that he is going to have another selling argument. We may yet have agents telling us to avoid eyestrain by buying the house with the wall of glass rather than the one with the barred Colonial excuse for a window.

Sanitation and Food Preparation

It was the advertising fashion in the thirties to stress kitchen and bathroom plans. Corporations spent a great deal of money on time-motion studies and the like, to prove that these business-like parts of the house had to be designed in certain ways or they weren't any good. Today, along comes an architect who puts the range in the center of the kitchen floor. Another designer puts the refrigerator there. Maybe the earlier studies weren't so conclusive!

Perhaps what we need is not a refrigerator in the currently popular shape—"style" would be a better word—but one differently conceived. So efficient is mechanical refrigeration design today that it makes little difference whether the refrigeration unit is below or above the storage box. It is just a step farther to a moderately priced unit located in a closet, pantry, utility room, or under the sink, with refrigerated drawers and bins built into standard kitchen cabinets. (This can be bought now, but its cost is prohibitive). Why *should* a refrigerator, in a modern kitchen, be a bulky, space-wasting object, which must stand free of other



New gas-fired air conditioner, with heating and cooling accomplished by the same flame simply by diverting the heat from one process to another, was recently announced. Turning a switch changes the process from heating to cooling and vice-versa, or provides independent air circulation. Setting a dial controls the room temperature. In addition to temperature and air-flow control, filtering and regulation of humidity are provided.

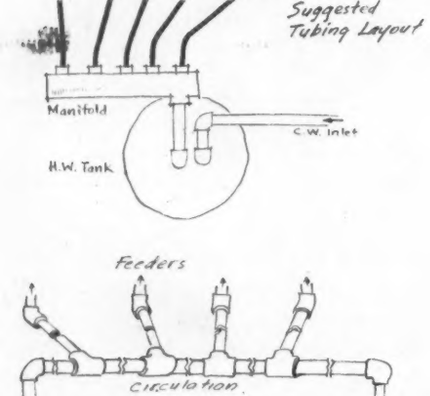
objects, with dirt-catching crannies surrounding it? Can refrigerated spaces be successfully insulated with silica aerogel (puffed-up sand) or some other material which would reduce the thickness of their shells?

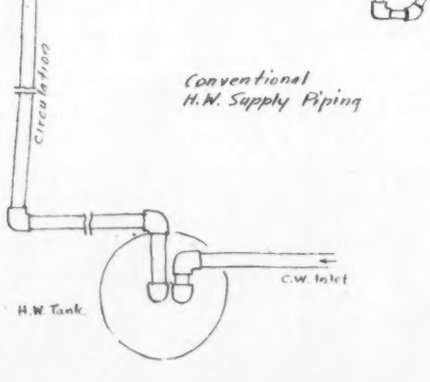
Similar queries might be posed concerning the kitchen range, the sink, laundry equipment. Suppose we were to have an "all-gas" kitchen, really efficiently designed (the fuel might perfectly well be electricity or atomic energy). The refrigerated drawer for meat might be close to the meat board, on one side of the oven; the refrigerated vegetable container in another convenient location; the milk cooler might be handy to both the baking department and the breakfast table. The range might also be separated into its component parts, each located for efficient use, waffle iron near breakfast table, oven and broiler at a non-back-breaking height, cooking top with burners spaced so that large as well as small utensils could be used at the same time, and so on. Perhaps the same fuel could at once heat domestic hot water and supply energy for refrigeration. Perhaps the house heating and cooling system could take on these jobs, and, in addition, rid the kitchen of some of its steam and odors.

Coming to bathrooms, we find one of the most hazardous pieces of equipment: the tub. (Oh, yes; it probably will be needed in the postwar house!) The cast iron tub, heavy, slippery, neither large enough for true comfort nor small enough to be truly an efficient user of space—can we develop a non-slippery yet cleanable surface for it? Can we have a lighter one, so we won't have to reinforce the structure unduly to support it? Vague reports have come in of waterproof plywood tubs; we've seen stamped and corrugated metal ones; are these the best answers?

In this portion of the house is embodied one of the clearest examples of changing customs and their effect on house design: the shower bath. At this date it would be difficult to determine whether the need for a space-saving device (say, in institutions such as gymnasiums or clubs), or mass advertising by its producers, or just a universal urge for something "better" than a tub, caused its initial acceptance. It does not matter in the long run; what is important is the fact that while a few decades ago it was to be found in very few houses, today the shower is an almost universally accepted part of each new house. Perhaps when the boy returns from the Army and the woman from war industry, to a home on the farm or in a slum, he and she will insist on having the showers which they learned to like in barracks or factory. About the time this portion of the remodeling market begins to be sated, some new idea will be gaining popularity. Perhaps we *will* bathe, not in streams of water, but in a mist which is expelled from numerous jets with automatically controlled force and temperature. Some of us, meanwhile, will certainly still be scorning the shower as an invention of the Devil.

Immediately below is a sketch of a tubing-and-manifold type of hot water distribution layout. Compare with the common piping layout sketched at bottom. The manifold system has been suggested for use in small-to-average sized homes, not for large homes. Its economies (outlined in the text) cannot be achieved in the large house.





The problem of water supply is one in which the interests of the designer and owner of the individual house, and the interests of the community (and often the region), are joined. The problem is not one of using water; H_2O is, unlike oil, a self-renewing natural resource. The difficulty arises in distributing the supply, and in finding it in sufficient accumulation. If the cores of our cities are decaying, if people are moving to suburbs, the distribution system must be extended—a most expensive process. Also, there still exist great areas in our metropolitan and small-city developments which are without a truly adequate water system. We have accepted the thesis that, for houses grouped together, a communal water supply is safer and more dependable—as well as more economical—than individual provisions. In the great metropolitan areas of Los Angeles and New York, to name only two of many, reservoirs, aqueducts, tunnels, and piping, miles of them, are being added to water systems that probably will be too small when they're complete.

It's not just cost of water—that's low enough, and probably, even with charges for such vast developments properly distributed, will remain so for many years. It's the aggregate of the costs involved in the economic waste of water and materials contained in the distribution system, in the contribution which inadequate water supplies make to the spread of substandard residential areas, and so on, that can hurt our standard of living and our national pocketbook.

To relate this to individual houses: A typical piping system for hot water distribution in the average residence wastes piping materials, water, and the energy to heat the water. Some years ago one of the utilties associations devised a more economical scheme. This consisted, primarily, of a manifold of large diameter directly above the hot water source, from which a line of quite small diameter ran by the shortest route to each hot water outlet. Piping could be used for the hot water lines, but with tubing greater economies could be achieved. Because it eliminated the standard plumber's practice of running a comparatively large diameter pipe, complete with elbows, a right-angled layout, and branches to fixtures, these substantial savings could be achieved: First, weight and cost of the distribution system could be reduced; second, because so little water remained in each supply line, it was not necesary to turn on a faucet and wait long for the water to "run hot"—hence water could be saved; third, fuel could be saved because so little hot water was wasted.

No great portion of the house-building public—or of the architectural profession—has embraced this innovation, perhaps because the potential savings, though substantial in proportion to their part of building costs, did not bulk very large in relation to the total cost of a house. However, to the man who is designing a great number of houses for erection at once, or one who is financing or building them, the aggregate of savings per unit should be most important. It should be said parenthetically that some of the greatest advances of this nature have come from recent research, both private and Federal, into the possibilities for grouping, condensing, reorganizing, even omitting, in some cases, plumbing equipment units and similar mechanisms for the home. Admittedly, war needs have driven us to some extremes of economy in war housing. But if we retain, in the postwar house or housing project, only that degree of economical compaction which is consistent with the standard of living of the occupant for whom it is designed, we will have gained tremendously. (We speak here of equipment, not of space standards.)

Economic pressure may likewise lead us to using for waste disposal piping a series of precast soil line units with inlets from various fixtures united in one piece rather than laboriously built up in the field from miscellaneous parts. This has already been designed; it may have been used in some war emergency developments, but its general use in time of peace depends upon the attitude of labor. Even if this type of development should not achieve full acceptance, the publication of Federal plumbing standards for emergency housing has cleared away much of the mumbojumbo with which, in the course of development, an honorable profession and trade have surrounded themselves.

Garbage disposal is one house design problem which has been scarcely touched. True, we have seen advertised a gadget which literally chews up kitchen waste and sends it down the sewer. But we're still suspicious of it; we have "sales resistance" to it, as the manufacturer puts it. Maybe the gadget *does* need perfecting, possibly with chemical action added to mechanical grinding. But when we arrive at the time when our garbage is automatically disposed of, rather than being manually taken from our homes through our streets to noisome dumps, we will have rid ourselves of a dangerous, malodorous concomitant of living—and an expensive one.

There Is No End in Sight

The list of new kinds of equipment for the home, which either *will* be available after the war or *can* be made available if the home builder wants them vocally enough, is without end. We have not commented, for instance, upon communication devices: telephone, intercommunicating 'phone, bell, buzzer, photoelectric cell, or the possibilities due to electronic developments. It is im possible in such a short space as this to speculate on each small item. To detail what, by now, most of us accept as obvious, would be pointless.

Gadgets—Or Ways of Increasing Comfort and Convenience?

It is very much to the point, however, to emphasize repeatedly the necessity for planning space, designing its enclosure, and building, so that the many existing and potential improvements in equipment can function fully. A poorly laid out kitchen, though it be equipped with all the up-to-date labor-saving devices, remains a poor kitchen. A badly planned or jerry-built house can successfully defy the best efforts of the heating engineer.

The problem comes right back to the building industry for solving: back to the architect, who will very likely have to try out a lot of unfamiliar methods of house design, not content himself with copying the successes of others; back to those who build and finance homes, who will probably have to learn to take reasonable risks in the name of progress; back to manufacturers, who are learning, some of them, that their shiny, eye-catching gadgets can become sources of dissatisfaction if the design of the house won't permit them to work.

We must work out the problem. Otherwise the shiny gadgets, after their novelty wears off, will find their way to a literal or figurative ashcan.

Comfort Produced by Coordinated Plan and Equipment

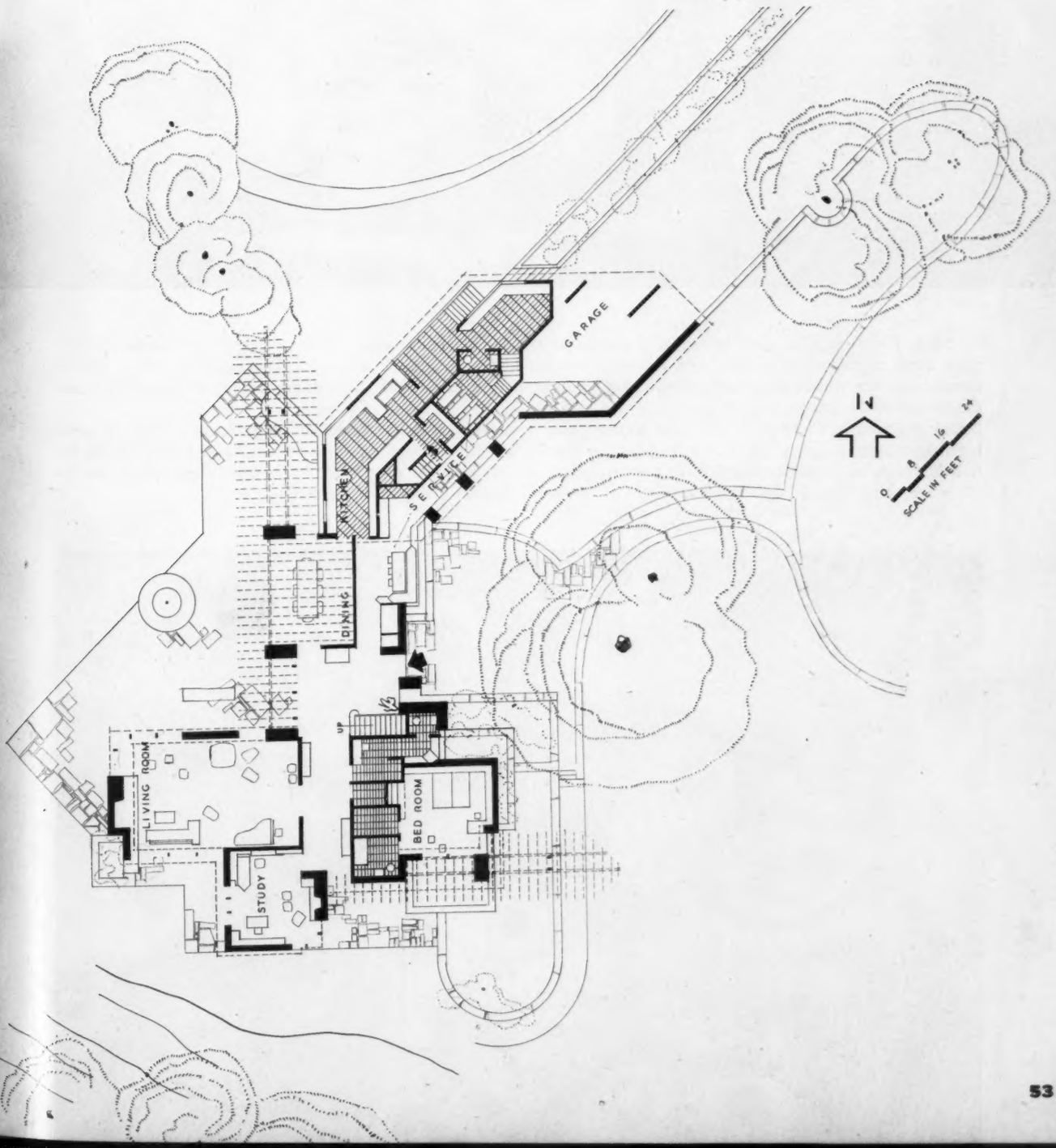
Anshen and Allen, Architects

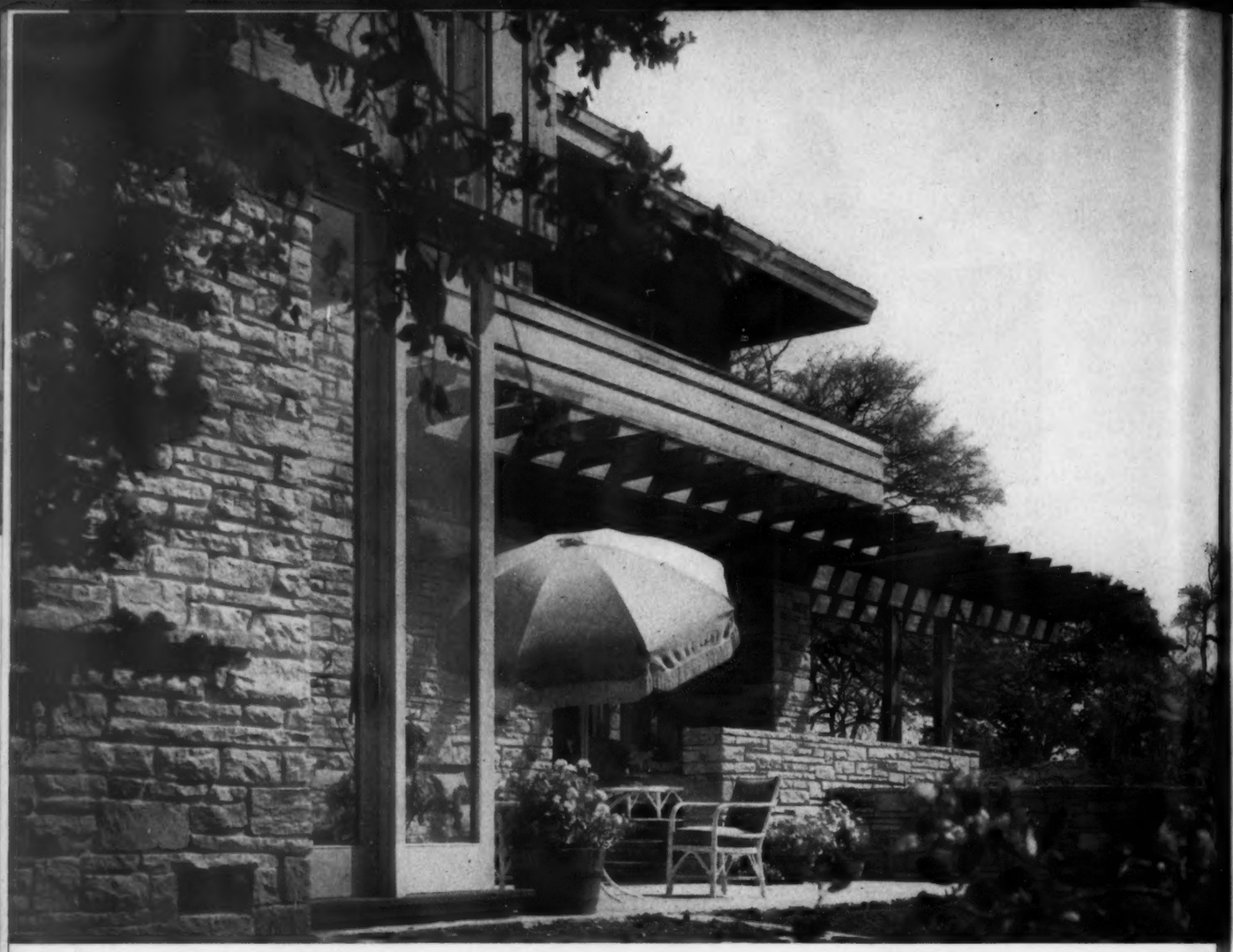
This house, built in Woodside, Calif., for Mr. and Mrs. Ralph K. Davies, is large, and so is not necessarily indicative of the typical post-victory home in America. But in it are contained many ideas for the house of the future, many of them specially designed because nothing pre-finished existed in the American market of exactly the kind which the owners and the architects believed to be best for the particular situation. The architects state that . . . "existing material conditions are now such that it would be possible for everyone to enjoy spreading roof-shelter without being hemmed in by immovable, opaque wall-shelter, to be pleased by the sense of free-flowing space contrasted with confined spaces, to be made comfortable by the conveniences for daily existing, to have their daily existence livened into joyous living.

" . . . industrial and research facilities, which make it technically possible to fabricate beautiful houses for everyone, have not yet been used to actuate this possibility. But knowledge (of it) has so affected our ideals . . . that the best houses of today are those which prognosticate the future . . . "

All photos by Dean Stone

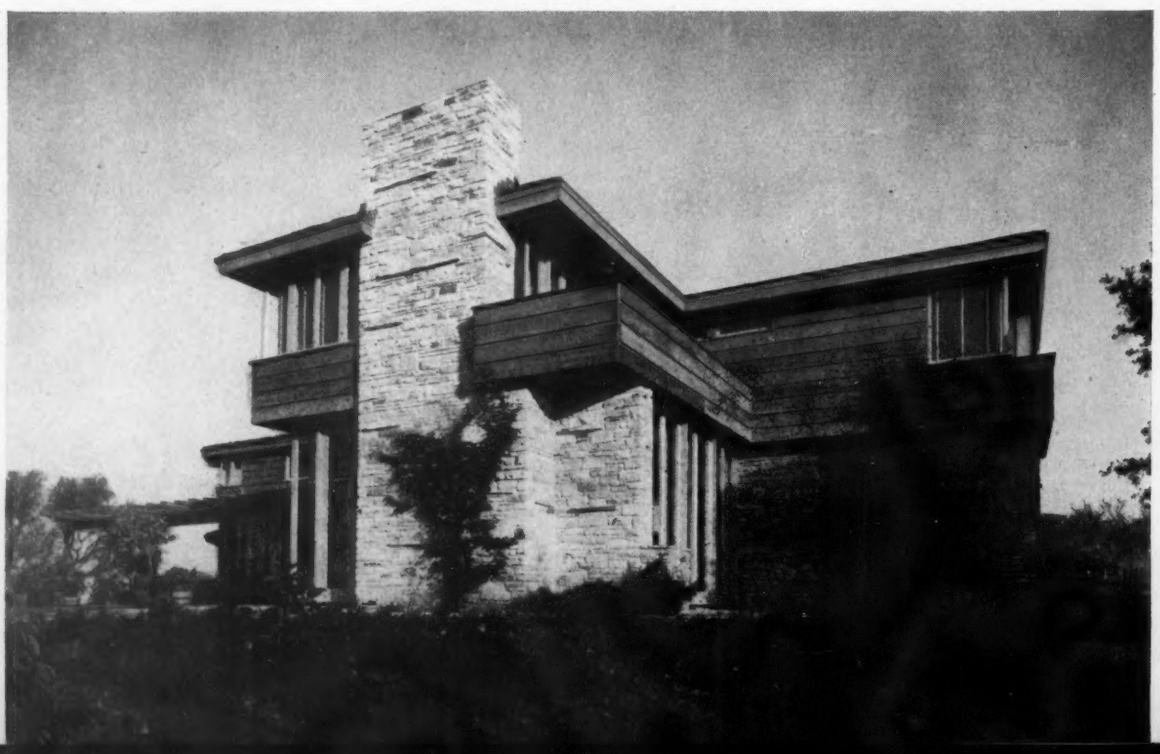
On facing page, entrance front; above, service side of the house. Plan below is of first floor. Second floor plan appears on page 60.





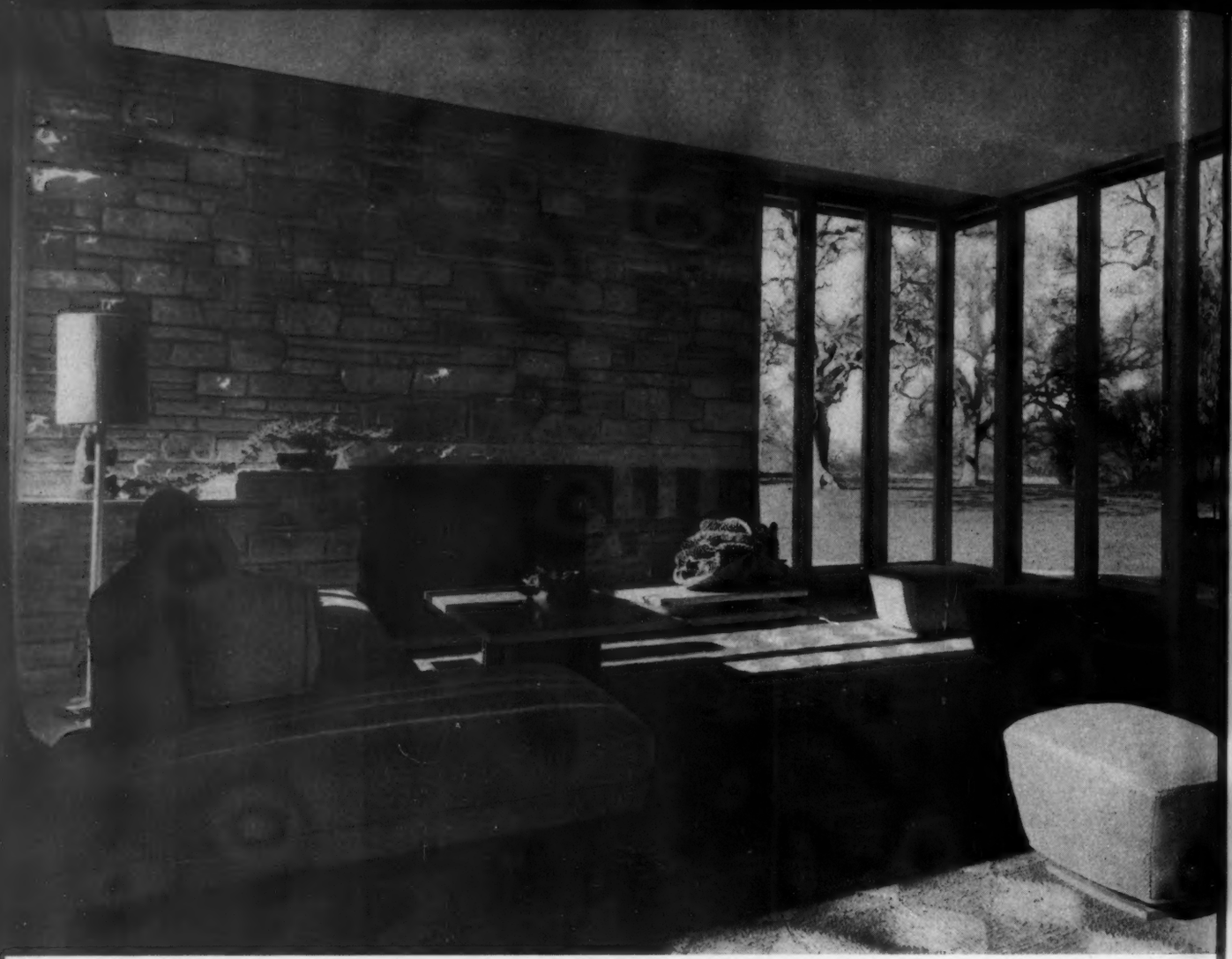
"Outdoor living—part of good living—is important to the design of this house. Wide overhangs, balconies, and pergolas form a gradual transition from inside to outside, and from outside to inside. The materials which formed complete shelter within the house are extended to form the semi-shelter of shade, thus carrying the house out into the foliage of the surrounding trees.

"Outdoor living has been precluded from the everyday living of most people because of our 'efficient' method of packing houses together like sardines to form what we dignify by calling 'cities.' But even in suburbs and small towns, we find hundreds of houses arranged so that the occupants cannot enjoy the scrap of land allotted to them by subdividers. They are either shut in their boxes or shut out of them." (From the architect's description.)



New

The principal terrace likewise has a pergola, which runs the full length of the main block. The rhythmic repetition of the pergola unit suggests one portion which might well be prefabricated.



In the living room above, furniture was specially designed. To quote the architects: "Sofa is made of aerated rubber covered with hand-woven fabric. Soft tones of mauve, yellow, and turquoise are used without monotony in all upholstery by reversing warp and weft. Hangings of machine-made fabric are dyed to harmonize with upholstery. Sofa is supported on three walnut beams and maple plywood legs, cut in oval shape and bent at 'knee.'

"Hand-woven fabric was used for upholstery, not because it is more beautiful than machine-made fabric, but because machine-made fabrics are not yet designed in enough color-and-texture sequences to make harmony throughout possible. The only advantage of made-to-order fabrics, furniture, houses, gardens, is the possibility of getting all four to go together to form a unified whole. The coordination of all parts of the building industry, either through separate prefabricating companies ordering their materials and equipment from the manufacturers, or through combinations of existing manufacturers, will bring planned variety into our houses instead of chaotic differences."

At left is the opposite end of the living room fireplace breast. In describing this detail, the architects say: "Glass, carefully fitted into deeply rabbeted stone, allows chimney to extend outside without interruption of heavy frame generally used to join glass to solid material. A similar detail was not used for doors because there is as yet no way of making operable doors weathertight without a certain jamb area. The problem of joining transparent and opaque materials may soon be solved by changing the physical characteristics of the same sheet of material. A slight variation of ingredients will produce either a transparent or an opaque plastic. Since plastics change both quality and form in one process, it may no longer be necessary to fit windows into pre-formed walls; wall and window may be one."

Above is the fireplace in the study; below, a corner of the first-floor guest room. From the architects' description: "Tradition of having fireplace in darkest corner of room is hangover from the time when it was impossible to do otherwise. Usually when there is most need for a fire, there is also most need for light—on dark, wintry days. But even when there is sun in the winter, it is not warm enough to preclude a fire, and the visual luxury of both sun and firelight cannot be surpassed.

"Integral venetian blinds, sliding screens, glass doors, pergola beams over terrace, afford gradations of light and air according to weather and personal desire of guest.

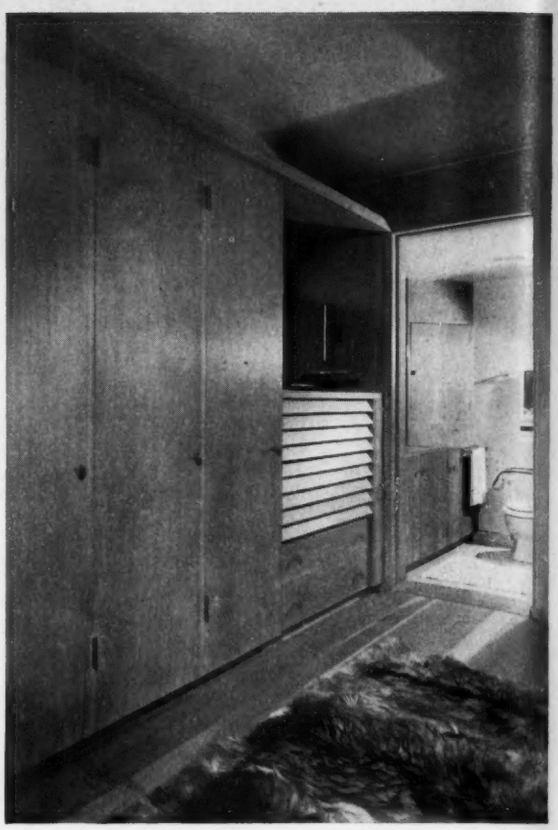
"Windows which could slide away on principle of automobile windows would completely remove obstruction to outside when so desired, without the physical effort and clumsy wall-width required to push back sliding framed doors into wall (here done only with screens). The sliding away of glass walls at will can be attained by complicated mechanisms, which are very costly when produced in small quantities, but what else is civilization if it is not the using of mechanisms which make human repose and activity more effective? The possibility of using a tough but pliable transparent material (developed through much more complicated mechanisms than those used in making glass) may make it possible to use a roll-away device."

At right is a bedroom wall, lined with built-in clothing cabinets, and with bathroom beyond. Below is a wall of the master dressing room, also lined with cases, which have mirror doors. In describing this portion of the house, the architects find occasion to make many suggestions toward developing suitable equipment. They say: "Shirt drawers become integral decoration. Oak cases in bathroom continue the design and finish of bedroom into bathroom. Structual glass top of case in bathroom forms countertop around washbasin—a costly way of providing convenience and beauty which, if factory-fabricated, would be as cheap as the glistening white wall attachments with plumbing pipes hanging in loops underneath them.

"Although the design of bathroom equipment has improved tremendously since it was first moved indoors, it has not improved relative to its possibilities in the last decade because of the obsolete material used and the limitations of producing separate pieces of equipment.

"Vitreous china and enameled cast iron necessitate abrupt joints with metal faucets and practically limit color to white because of expense of achieving other colors. Other materials impervious to water have now been developed which can be stamped or molded (with faucets, pipes, handles, as integral part of the whole), and which can be made in any number of shades and tones of various integral colors. Light metal equipment used in airplanes and trains is of much smoother design (due to its stampability) and reduces transportation costs (due to its extreme lightness). But metal is as unpleasant to touch as vitreous china, and very probably plastic materials, softer to the eye and warmer to the touch, will come to be used.

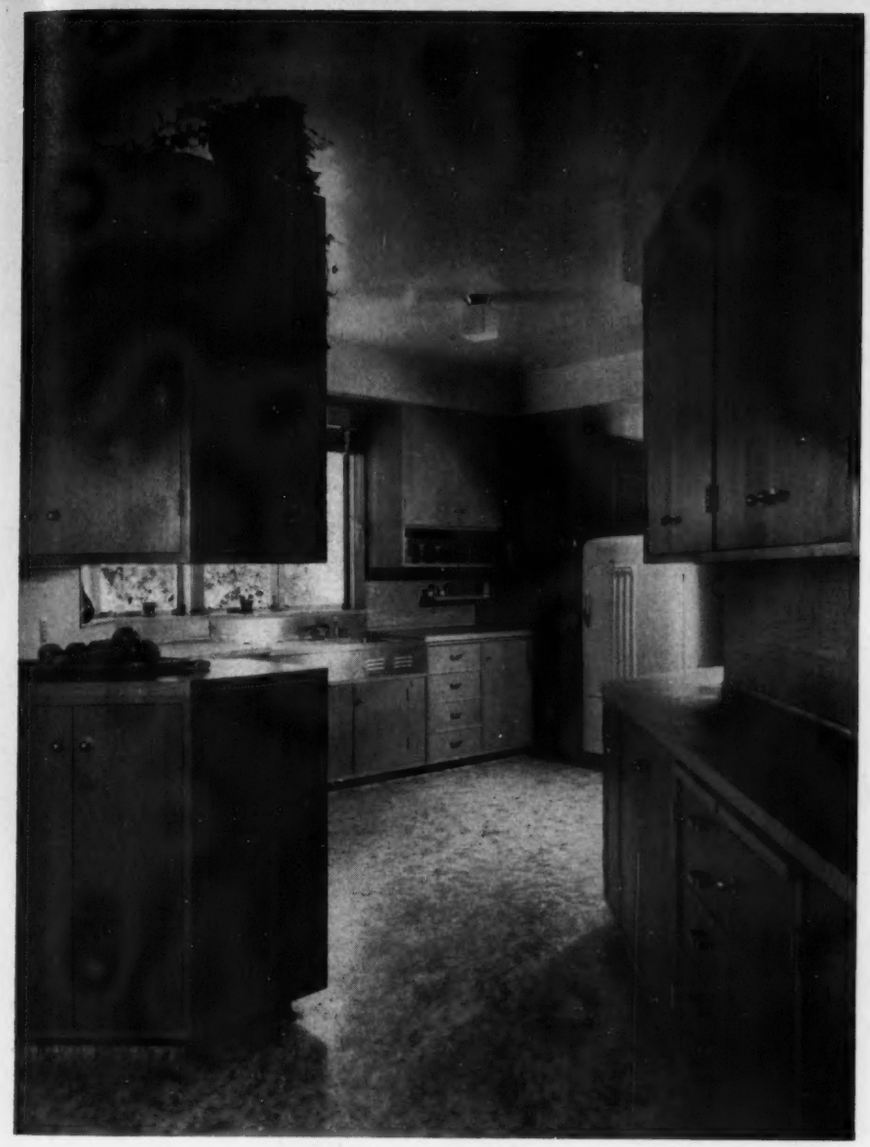
"Design of bathroom equipment cannot be improved to any significant degree until the whole bathroom is made in one unit. Washbasins have not been made integral with counter and case because size and shape of bathroom vary. When structure and equipment of houses are designed simultaneously, bathroom will be made in one unit, with plumbing pipes integral with wall and floor, thus eliminating intricate connections which require hand-fitting and cause complicated inter-work of several trades."



The two views of the kitchen, on the facing page, lead the architects into a further discussion of house equipment. "White refrigerator designed to look as large and slick as possible for sales-appeal, stands out like a sore fist. Even wealthy individuals cannot afford to have complicated household equipment especially designed for their houses. The capital investment required to manufacture mechanical equipment can only be paid for by millions of people buying that equipment. As a larger and larger proportion of our houses consists of household equipment, the extent to which an individual house can be made to order becomes smaller and smaller.

"Cases are of vertical-grain white pine, counter tops and splashes of white ash (coved), finished with water-white lacquer to preserve natural warmth of wood and provide more durable finish than paint. Eventually, everything in the kitchen, not just the lacquer finish of counter-tops and cases, will probably be made out of different kinds of plastics—which have the tactile warmth and visual coolness of wood.

"In the meantime, sink had to be specially fitted with monel metal to form continuous counter with dishwasher and towel dryer. Combination units of sink, stove, refrigerator which have so far been manufactured have been designed with apartment-house compactness and hospital sterility. Glistening white metal door of towel-dryer stands out in glaring contrast to wood. It is impossible to have a softly harmonious kitchen if one starts with white as the basic color, because the only colors which can be used with white are other harsh, brilliant colors. Therefore all one can do, until materials and equipment are designed at the source to make a pleasantly livable house, is to ignore the glaring white sanitation complex of the plumbing industry."



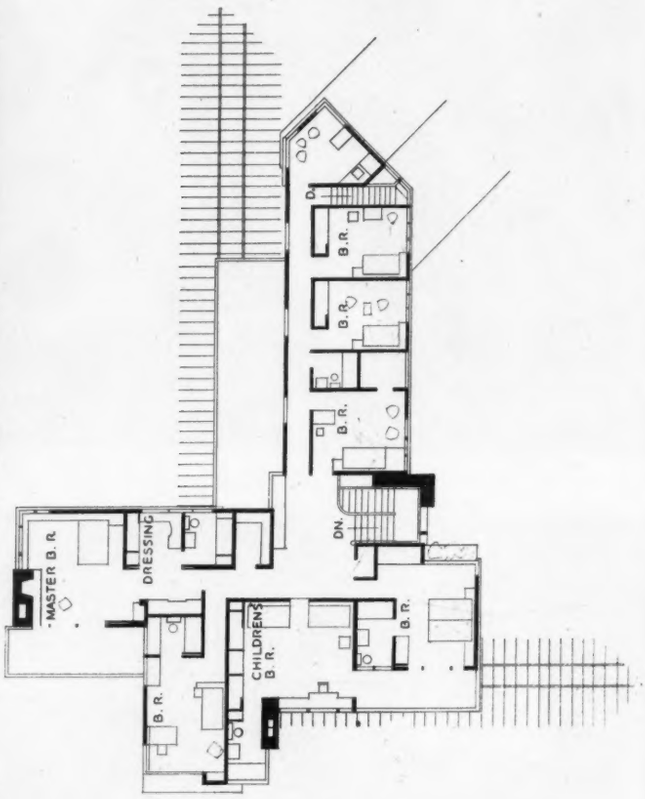
At right is the stair hall; center below, master bedroom; bottom, children's room. Quotations are from the architects' discussion of the house.

"Unlike the stone wall, the redwood door was delivered to the site ready-made from the factory. The same construction methods were used to make this door as those used to make stock doors, but it had to be made to order because stock doors did not come in the size, finish, and design required in relation to the rest of the house. When doors, wall, furniture, equipment, are designed to go together, doors will be kept in stock which form an integral part of the design of the whole house. When doors, wall, furniture, equipment, are designed to be manufactured together, then whole houses will be kept in stock. Prefabricators have so far only regularized the putting together of existing materials and equipment. Prefabrication has carried traditional building methods to their ultimate conclusion—the efficient assembly of *pre*-fabricated materials. There will be no significant progress in attaining high-quality houses at low cost until our houses are truly fabricated—all parts designed and fabricated to form a whole."

"Smoothly flowing surfaces are left free of lighting fixtures by placing lighting in redwood shelves above windows.

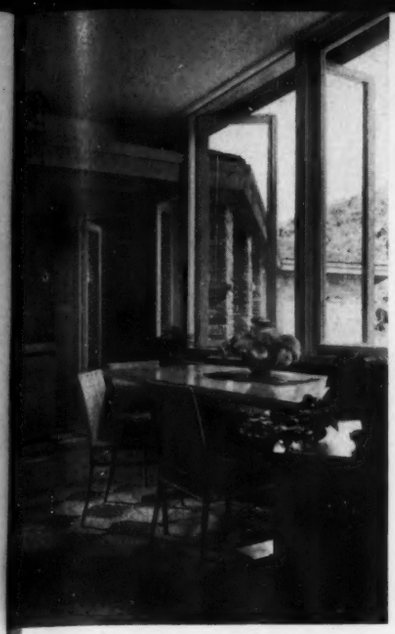
"Glass doors on left open to deck for private outdoor living. Bedrooms should allow space and convenience for private living —not just room for sleeping and dressing."

Second Floor Plan



"Children must have room for play and study, for noise and quiet, apart from the grown-ups—whose periods of quiet and noise do not coincide with those of the children.

"The plaster which is used in finishing most of the bedrooms is used because it is the cheapest method of providing a finish at present. The high cost of building a really pleasant house to be living in today prevents even those people whose income should be enough to cover even 'luxury' of living from enjoying all the pleasantnesses and conveniences they would be able to afford if houses were designed at the source of fabrication. The visually unpleasant monotony of plaster and the high cost of its upkeep will be avoided when good-looking, washable, integrally finished materials become as cheap as plaster."

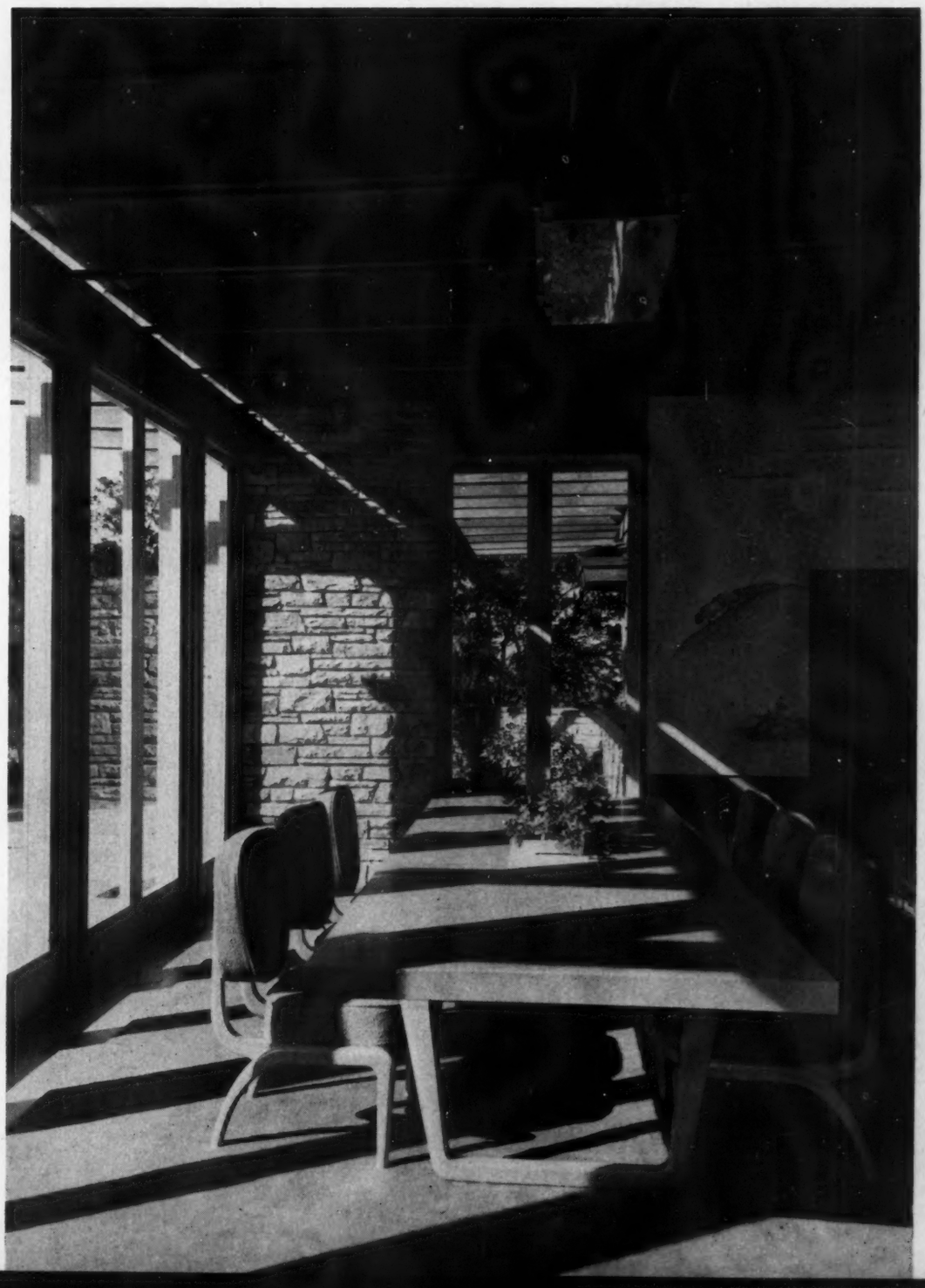


At left, the breakfast room; below, dining room. The architects, in describing this room, take occasion to discuss further the fundamentals of house design: "Backs of chairs, or people seated in them, become the decoration of the dining room. Streak of sunlight extends exterior to interior while redwood beams extend interior to exterior. Fitting of small pieces of plate glass between beams to achieve this effect took much time and labor—which could be reduced through proper coordination at factory. Nevertheless, this type of construction is not amenable to the most efficient fabrication, and is not necessary with moldable materials.

"Maple plywood legs, maple table top, foamed rubber seats and backs of chairs covered with hand-woven fabric, recall living room furniture in material, color, and design. Furnishings throughout are unified by planned repetition and variation. The subdivision of a house into rooms should be lessened, not heightened, by the furnishings. Design and color of furnishings should blend from room to room, just as the rooms blend the one into another.

"The separation of a house into rooms has been the result of a desire for privacy. Only a few people, however, have been able to afford both space and privacy. The furnishings of many existing houses—both large and small—repeat this kingly ideal by decorating each room disparately—one in Louis XVI, one in Italian Renaissance, etc.

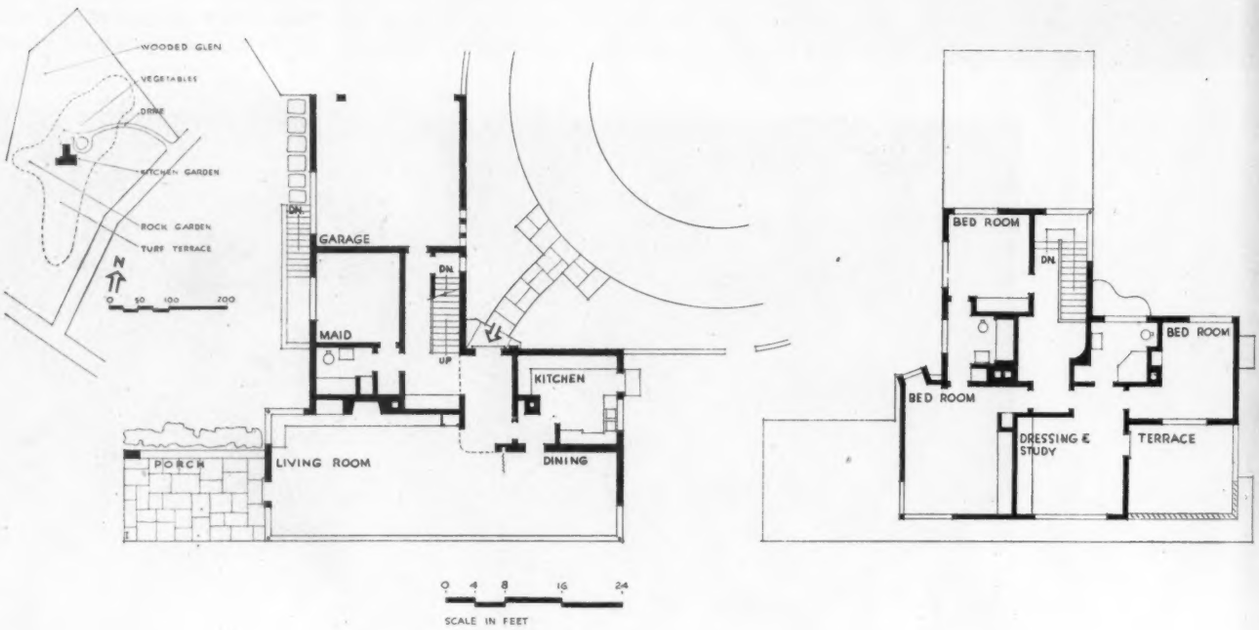
"The possibility of having movable partitions will solve our need for both space and privacy by making space flexible. The structural unity of the house which permits such internal flexibility will be emphasized by the harmonious unity of the furnishings which movable partitions necessitate."



Professional Man's Home in Ohio

Garriott and Becker, Architects

John W. Becker (of the firm which was formerly Garriott and Becker and is now Garriott, Becker and Bettman) designed this house for himself. He says, "The house, which exhibits a certain lack of sympathy with what a friend of mine calls 'the prevailing modern rustic' is, I can testify, a continuous joy to live in." It is situated in the center of an eight acre tract outside Cincinnati, and looks off southward to unspoiled views. The principal rooms are arranged to take advantage of the views and prevailing breezes. On the northeast, where the prospect is uninspiring, the house presents relatively solid exposures. The family consists of husband, wife, two children (boy and girl) and the entire design of the house is intended to reduce housekeeping chores to an absolute minimum. Each bedroom contains sufficient built-in storage facilities to take care of the occupants' belongings at all seasons.



The canopy over the long row of windows on the south side of the living-dining room and porch is designed to exclude summer sun but to admit winter sunlight generously.

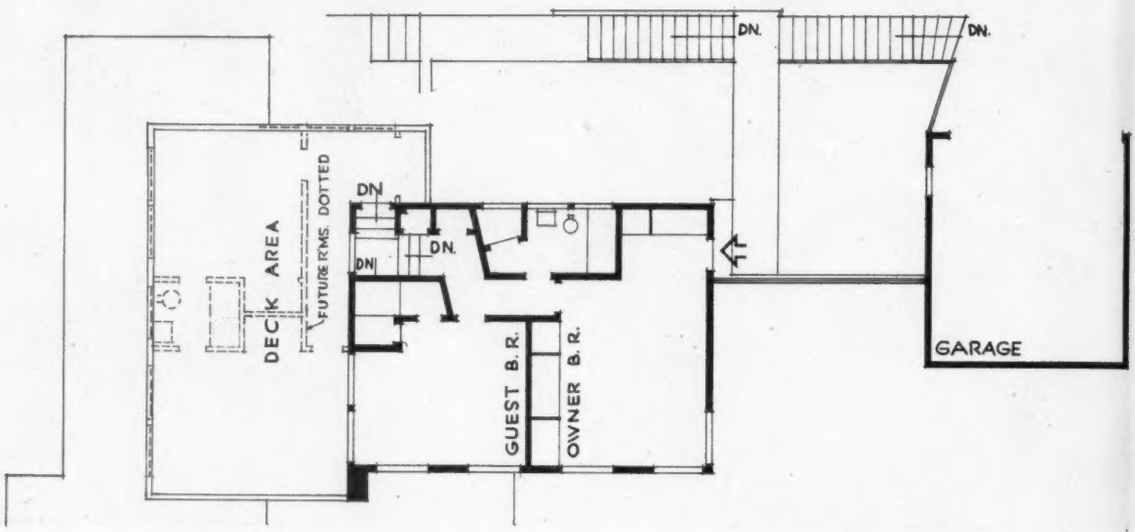
Construction is of cinder concrete block and wood siding with tar and gravel roofing. Interior of the living-dining room is painted, with the walls and ceiling a pearl gray. The floor is of gray rock elm. Upholstery is gray and pale plum color. Rugs are plum colored; hangings, medium gray. There are strong accents of yellow and turquoise in the color scheme. It is particularly noteworthy that such items of equipment as closets, bookshelves, etc., are entirely built-in and that the closets have sliding fronts which make the interiors completely accessible.

Outdoor Living Space on a Steep Site

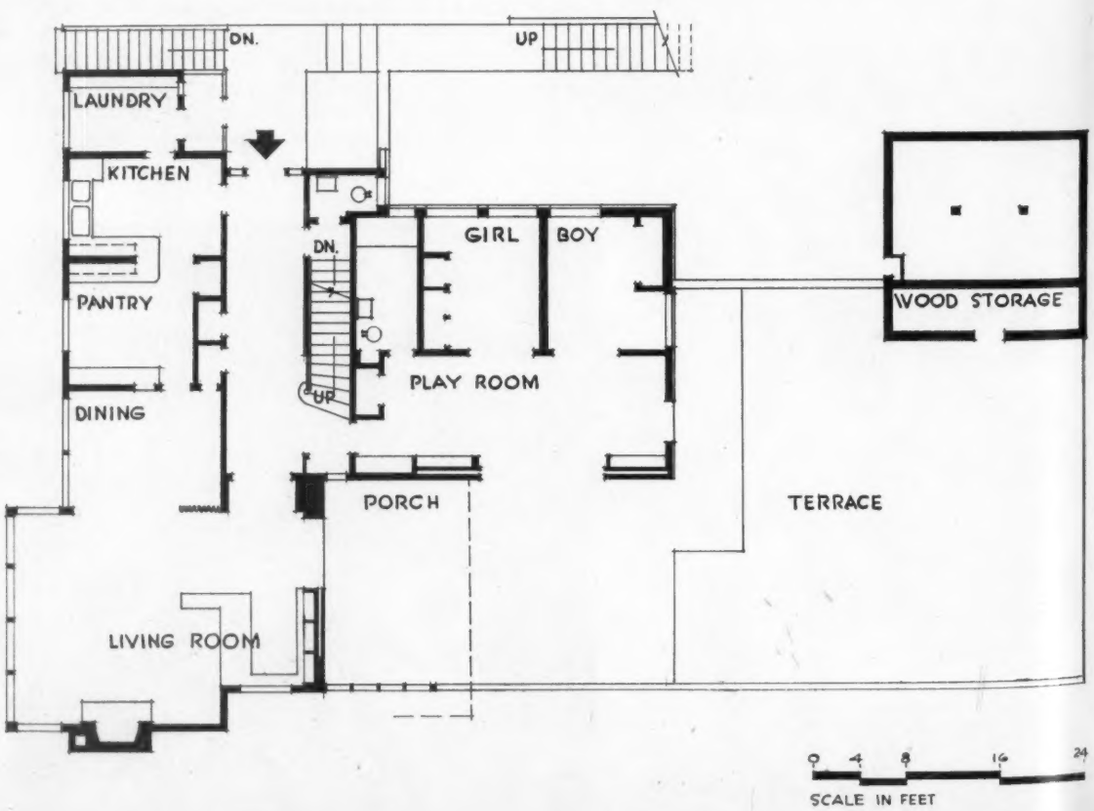
William Wilson Wurster, Architect

As the photographs show, the site of this house (built for Dr. and Mrs. Lloyd Eaton) is so steep that it is impossible to walk around the building. The entrance is at the upper corner and the view is best at the outermost corner, which means that the living room has to be out as far as the lot permits. The view is dramatic—to the east the hills, to the south a deep California canyon filled with live oaks and in the distance the city of Oakland, to the west San Francisco and the Golden Gate bridge, to the northwest Mt. Tamalpais in Marin County, with the great Kaiser shipyards at Richmond, which at night are a white blaze, in the foreground.

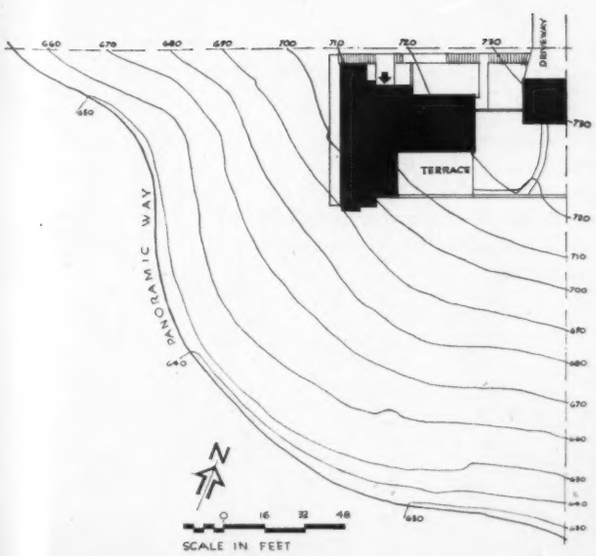
For such a site the client wanted easy access to protected outdoor areas. She had seen the Bauer house designed by Harwell Hamilton Harris and wanted two children's rooms and playroom as in that plan. In this neighborhood there is a great demand for small apartments, as it is near the University of California, so to help pay the building cost it was decided to place an apartment in the lower part of the building but with no sacrifice of privacy for the owners. This was so arranged that it could be taken over by the owners as a study later on if they desired (Plan on page 71.)



The two bedrooms on the top floor are at present used as an owner's bedroom and a study. The latter can easily be converted into a guest room. The deck is arranged to permit building two or more additional bedrooms and bath if it should become desirable. The children's rooms on the main floor have "electric nurse" connections to the owners' room and the servant's room below. The playroom opens onto the deck and the garden, which is protected from the north and west winds and has sun all day long. The living room opens to the same terrace. The sketch on page 69 shows how this arrangement is really the core of the house.



Photos by Roger Sturtevant



Photographs of the southeast side of the house show the deck and garden built into the hillside. The projecting bay is at the end of the living room.

The interior of the house is arranged in an open manner. The architect has consciously avoided dividing it into compartments. Except where privacy requires, doors have been omitted in an attempt to make the spaces flow into one another. Thus the separation between living and dining spaces is an accordion-fold fabric screen. The doctor needs a desk for some of his work; this has been built into one end of the living room and has a cover to pull over it so that papers need not be eternally cleaned up.

Under the main floor deck is an outdoor drying space, convenient to the laundry and drying room in the lower front. A description of the lower floor is given on page 71.

The hillside was turned to advantage in another respect. Dr. Eaton, like other doctors, has to make night calls. The site made it possible to enter the top floor directly through the main bedroom. This is most convenient for the owner or for use of the family when returning from a trip with suitcases. Front and back doors are easily reached from any part of the house as they are quite close together.

The Eaton house is equipped with many labor saving devices. These include the usual range and electric refrigerator; there are also an electric dishwasher, mangle, clothes dryer, washing machine, automatic gas water heater, etc. In addition to the built-in equipment (such as cabinets, desk, etc.) there are special recessed ceiling lights, and the entire ceiling over the lower floor apartment (as well as the wall between the children's bedrooms) is sound-insulated with 1 inch of mineral wool. Over the lower bedroom this insulation is increased to 2 inches in thickness.

Construction is of wood frame, with redwood surfacing on most of the exterior. Flashings, gutters, and leaders are of galvanized iron, except that waterproof building paper is used at windows and doors. Galvanized iron is also used for the ceiling lighting boxes, light trough in dining room, and for the gutter. Roofing is built-up, with a mineral-surfaced cap sheet.

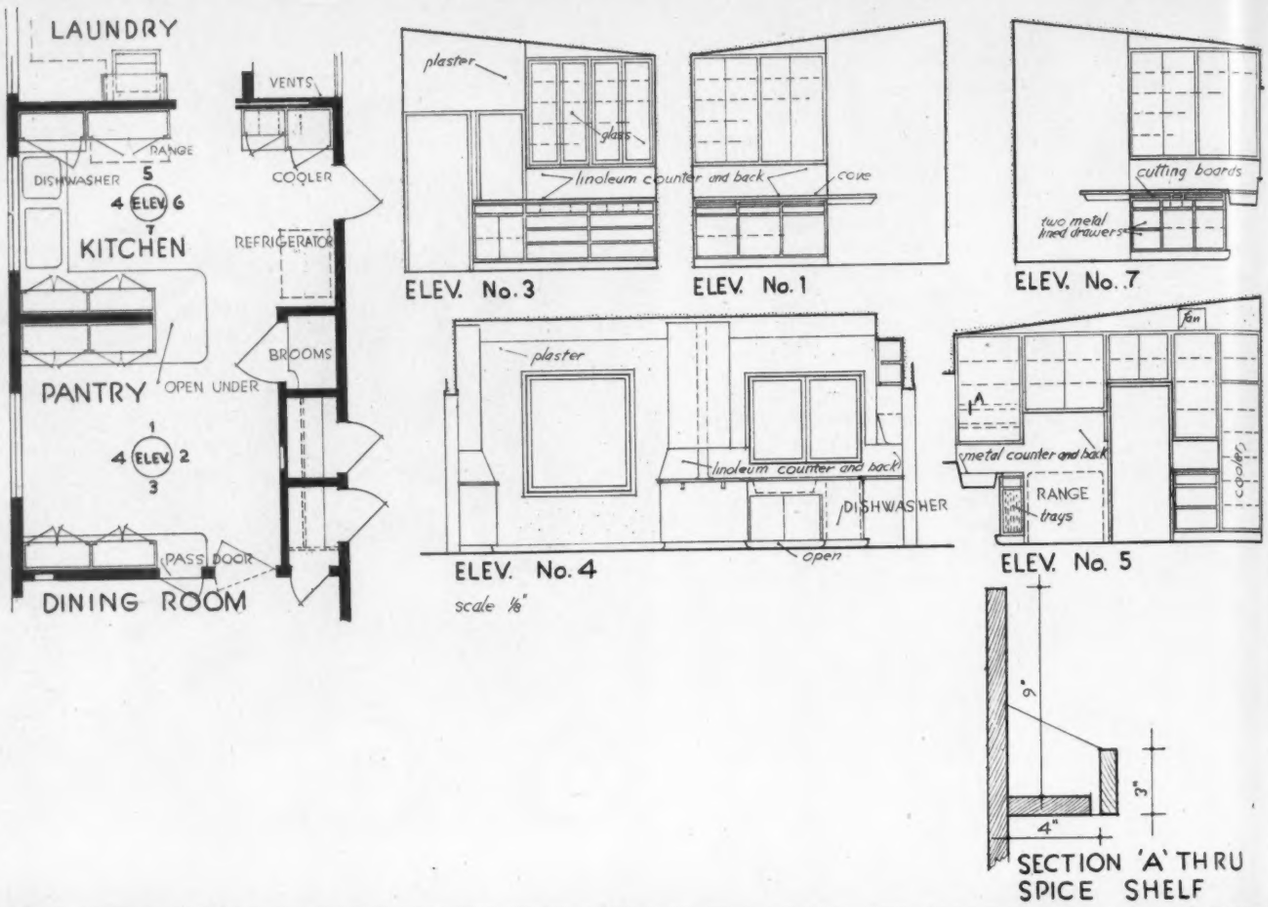
Interior walls are plastered in kitchens, pantry, service room, baths, lower bedrooms, lower hall, and stair well. All ceilings are plastered. Sand finish plaster with integral color is used in some areas, gypsum in others. Floors are linoleum in kitchen, dressing closet, and baths on lower floor; in service room, kitchen, pantry, bath, playroom, and children's bedrooms on main floor; and in owners' bath on upper floor. Other floors are oak generally; concrete in some portions.

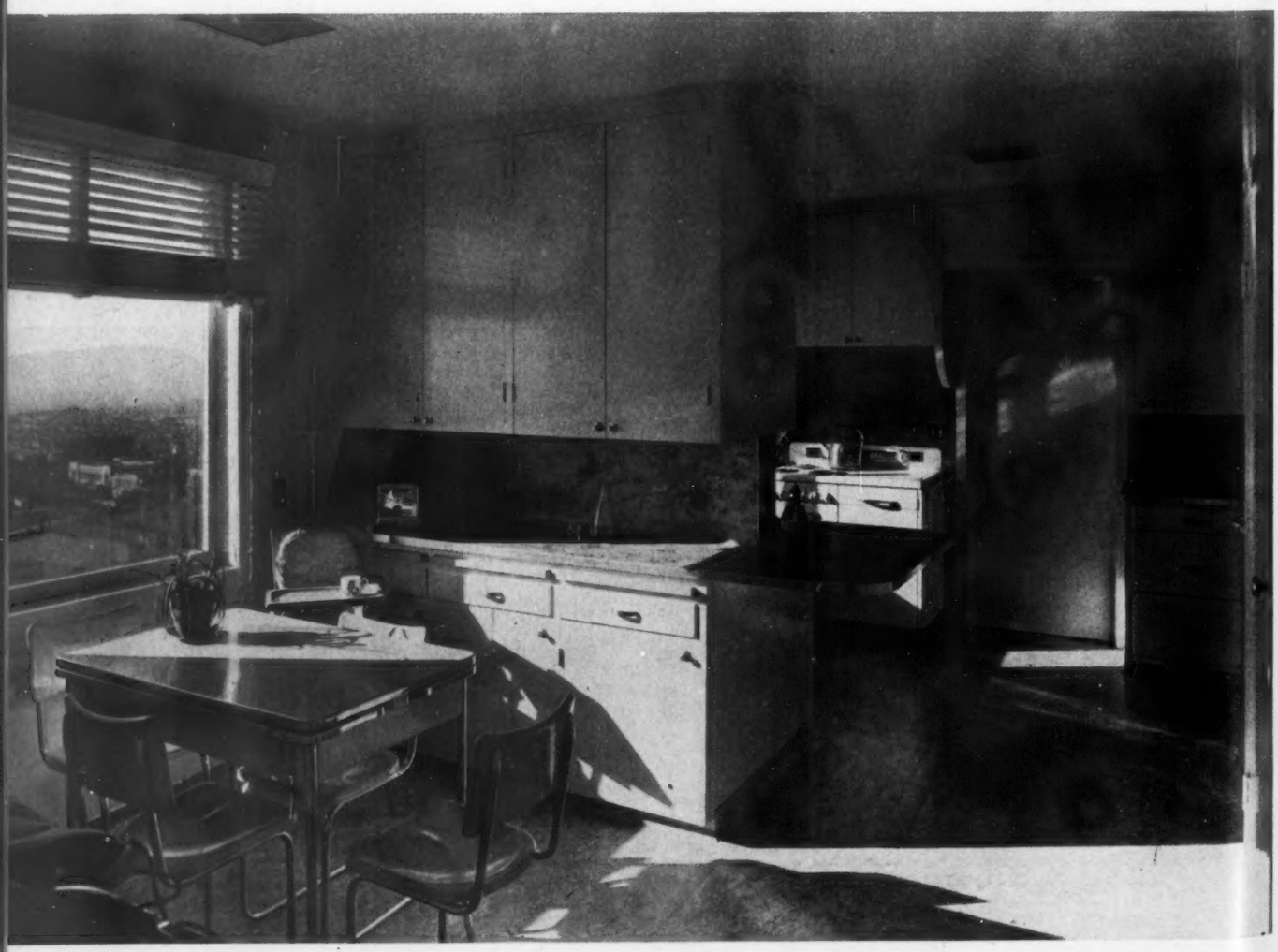
Exterior trim is redwood; interior trim Philippine Mahogany for special cabinet work, gum or white pine in other areas. Plywood, ¼-inch thick and surfaced with gumwood, is the wall finish in the lower living room, playroom, and children's bedrooms. Philippine Mahogany plywood is used for the main living room walls, and in the dining room and entrance hall. Living room ceiling beams are sheathed with mahogany plywood.

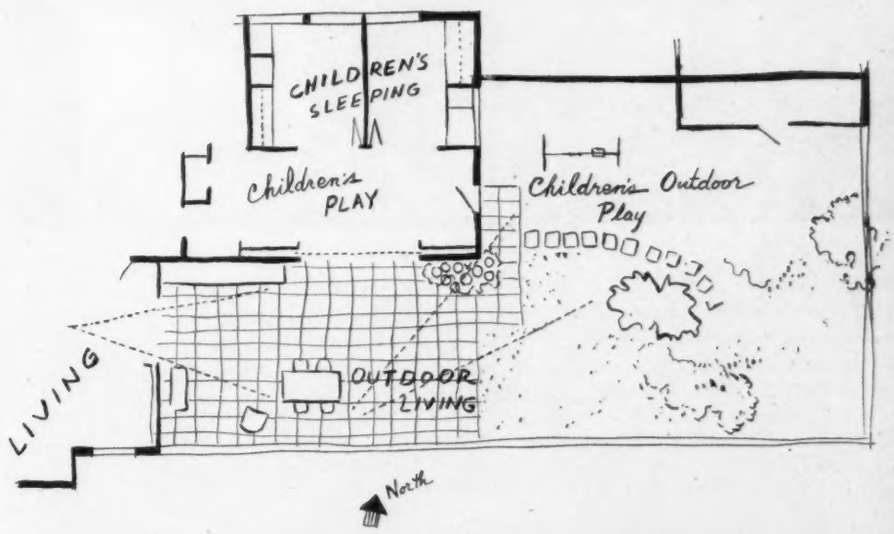
All hot water piping is copper tubing with sweated joints; cold water piping is galvanized steel.

A folding curtain can be drawn to separate the dining area from the living room. Below is the built-in desk at the other end of the living room, with cases and bookshelves behind it. The sliding door leads to the roofed terrace adjoining the children's suite.

Selected Details: **Kitchen layout, House for Dr. and Mrs. Lloyd Eaton, Berkeley, Calif. William Wilson Wurster, Archt.**







The sketch above shows how the layout of garden, terrace, children's rooms, and living room was really the core of the house. With this rather difficult question settled the remainder of the house follows quite naturally.

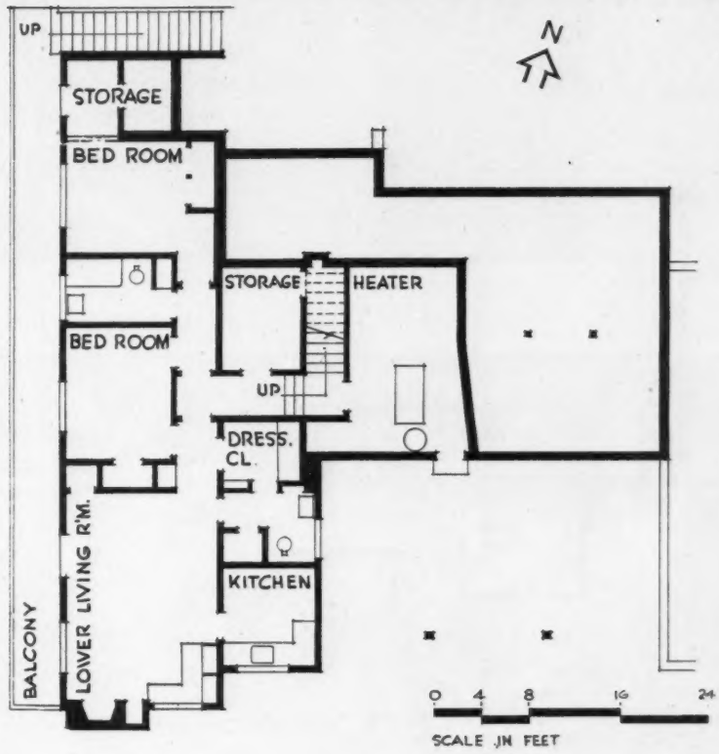
Use of sliding doors, so that the children's playroom can be opened almost completely to the terrace, is a noteworthy feature. Supervision over the children while they are at play is comparatively easy, although there is not as direct access as there might be from the far corner of the house to the garden. The kitchen, shown in some detail on the facing page, is designed primarily as a working space and the layout makes it possible to serve meals either in the pantry alcove or in the dining alcove off the living room. As is true of other parts of the house, there is a wonderful view from the kitchen.

The exterior of the house is of redwood, treated to keep its color so that it will not bleach gray or turn black as untreated redwood does. The sash are painted dark green. The roof is of black mineral coated roll roofing. Interior finishes are as follows: in the children's rooms the walls are of plywood, living room walls are of plywood with Philippine mahogany surfacing, and the two bedrooms and hall on the upper floor are covered with grass cloth. The architect informs us that the house was built by S. J. Bertelson and adds that Mr. Bertelson is a wonderful craftsman.

Photographs below show the entrance doors (both front and kitchen) and the garage entrance, which is at a much higher level than the remainder of the house.

The plan at right shows the rentable apartment, laundry, drying room, and furnace room of the Eaton house. The apartment has its own outside entrance, dressing room, bath, and kitchenette. Of the two bedrooms shown, one is at present allocated to the apartment and one for the family servant. An outside door to this latter room makes it unnecessary for the servant to go through the house in order to reach the room.

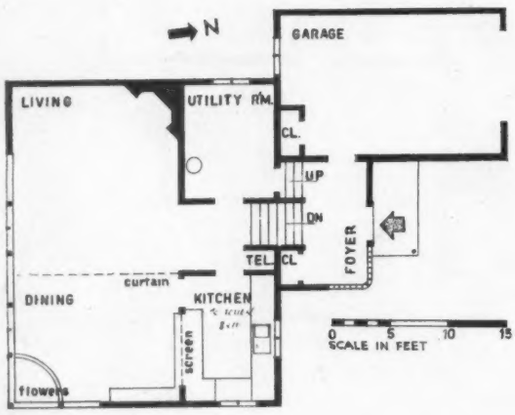
Architect Wurster states that this house embodied one of the most difficult problems his office had encountered. It was necessary to make some changes as the job progressed and these were carefully followed through. He adds that the final result gives great satisfaction to both the client and the architect. Only one minor fault remains: the lower muntin of the living room windows on the main floor is at such a height that it interferes with the view of persons sitting on the built-in couch. The muntin was put at this height deliberately, to provide a feeling of security which seems necessary because the living room is so far above grade. Perhaps after the war, when such alterations can once more be made, the windows can be remodeled in some more satisfactory way.

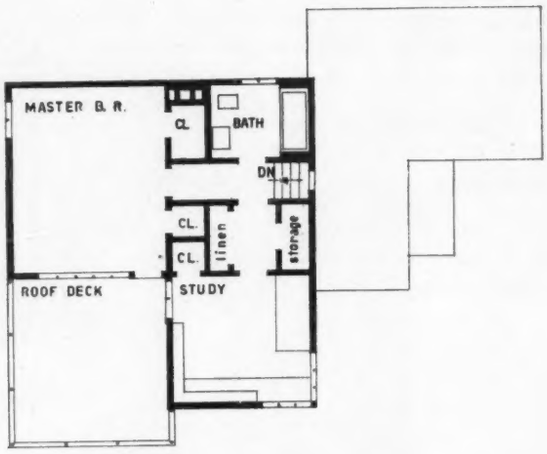


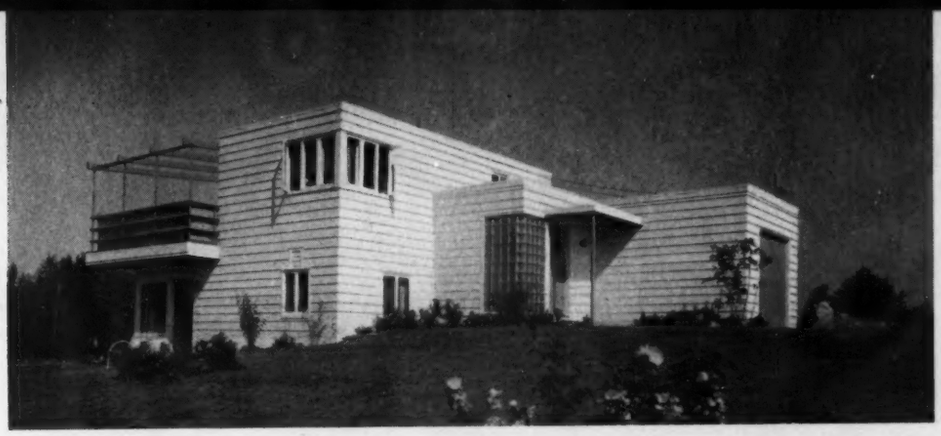
Unconventional Residence in Maine

Alonzo J. Harriman, Architect and Engineer

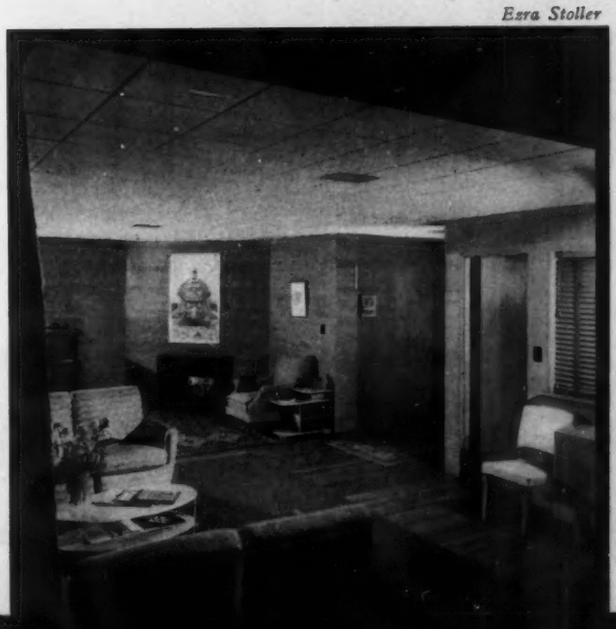
This house, for Mr. and Mrs. Whitney, has been carefully studied in an attempt to fit a contemporary solution into a traditional environment. The use of siding and white paint is in the best Colonial tradition, but the architect has not been afraid to omit the usual roof or to provide a plan which is distinctly utilitarian as well as extremely comfortable.







Ezra Stoller

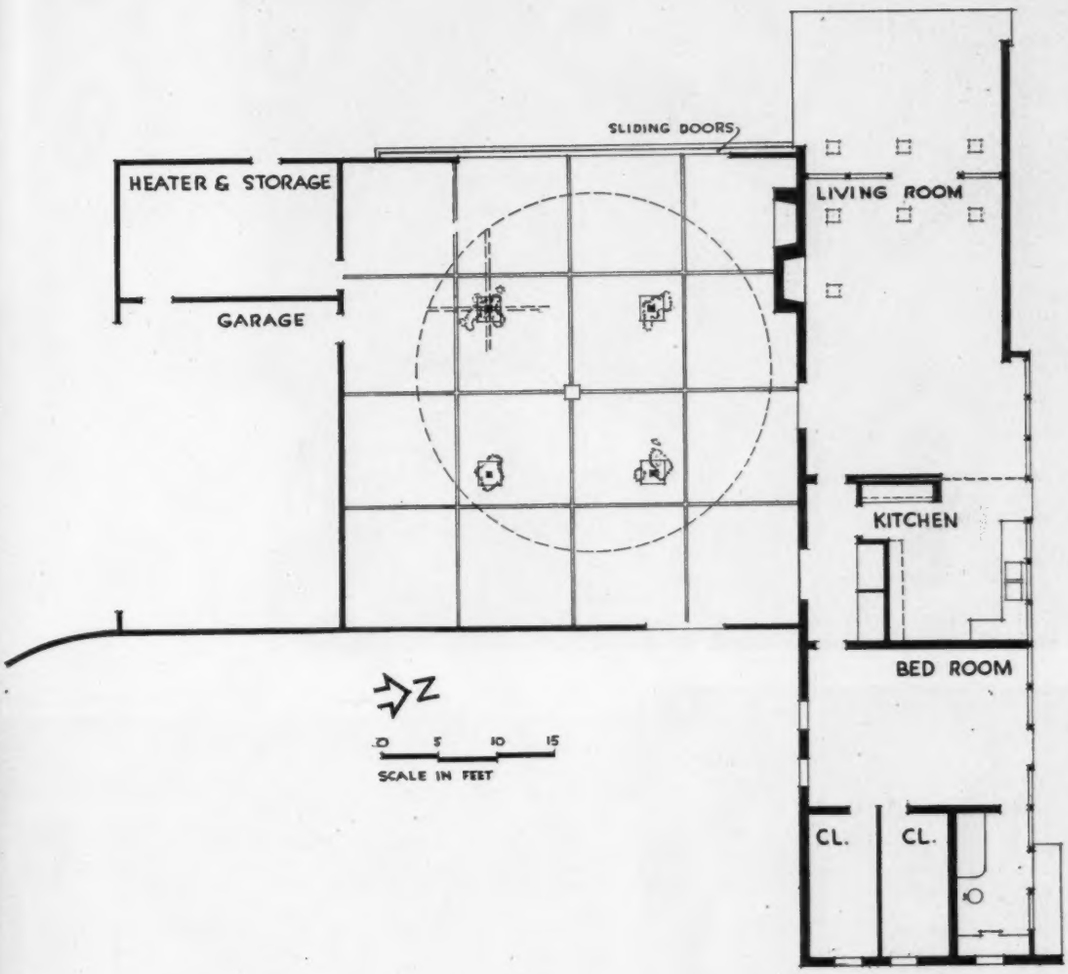


The increasingly common practice of making it possible to combine living and dining spaces is followed in this house. Also worthy of note are the compact kitchen and the serving counter opening into the dining end of the living room. The house can easily be run without servants. The opening from kitchen to dining space is equipped with a venetian blind—a simple and direct method of separation. Floors are surfaced with linoleum in some portions, wood in others. The heating boiler is oil burning and the radiators are of midget type. The house is insulated with mineral wool and the flat roof is of built-up composition. Interior walls are painted with a textured paint except that the living room has clear Maine pine walls, which are treated with a penetrating finish.

New Pencil Points, October, 1943

Designed for Easy Upkeep and Minimum Housework

William Wilson Wurster, Architect



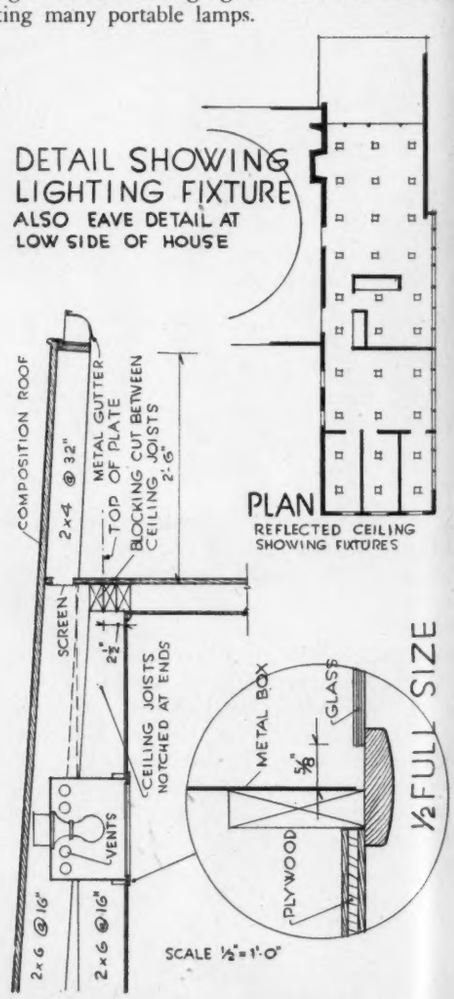
Solid lines in atrium show floor divisions, dotted lines indicate roof framing and circular opening. Outside the bathroom door is a shower for use of anyone who has been gardening and does not want to bring dirt into the house.

Photos by Roger Sturtevant

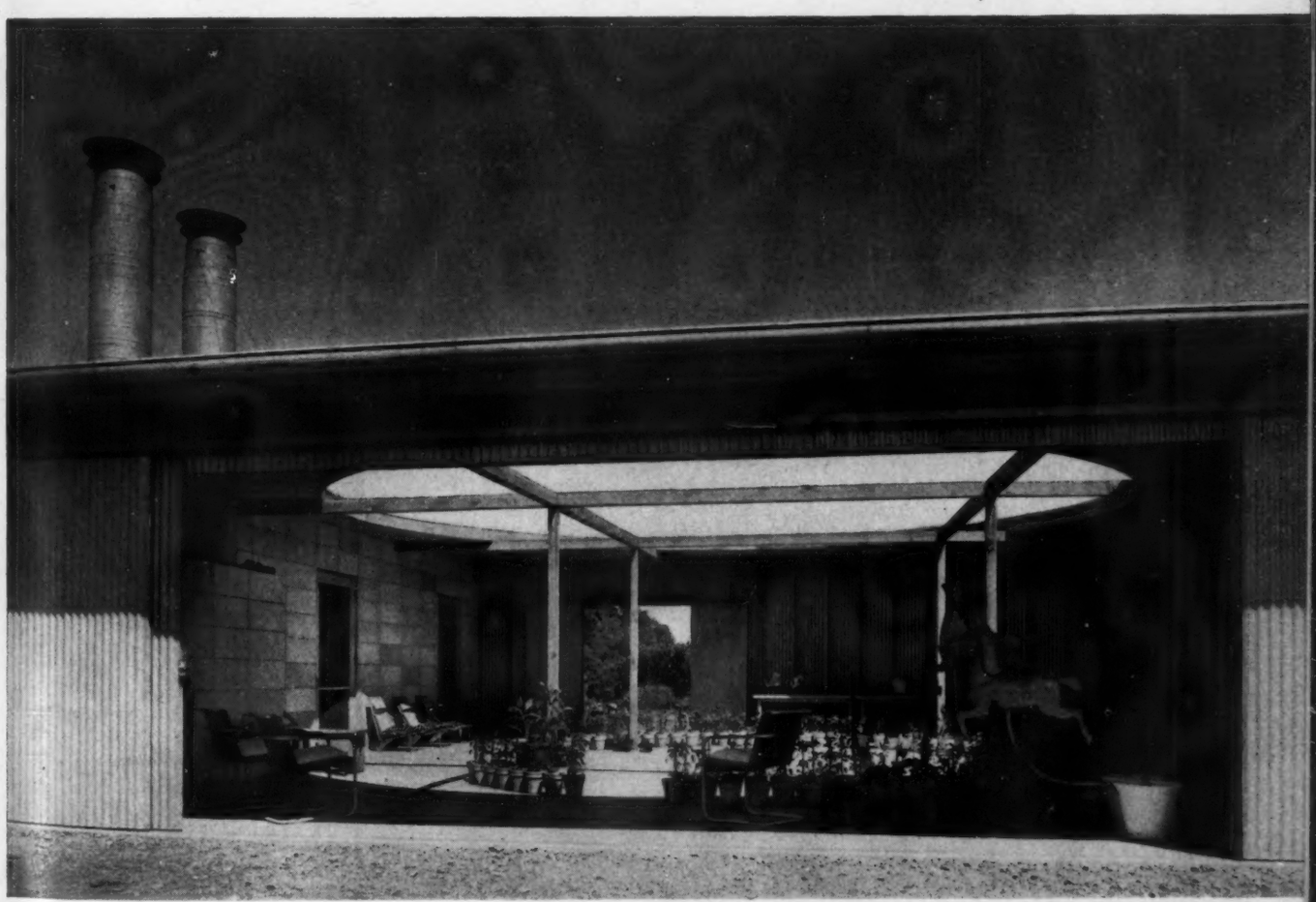
Dr. and Mrs. Saxton Pope, owners of this house near Orinda, Calif., at first wanted a redwood and plywood house for temporary use. This was to be moved later to another location, for a gardener or caretaker.

But the cost was greater than had been expected, and it was decided to design and build a permanent house. The final house has a main portion of concrete block, and an atrium and garage of corrugated galvanized iron supported by wood framing. In contrast to an earlier house (also designed for them by Wurster), which had floors at many levels and was quite dramatic, the owners now wanted a house all on one level, simple to keep up, where they could do their own work. Both are enthusiastic and successful gardeners, and Mrs. Pope has weaving as a hobby; she wove all the furniture coverings shown here.

Above and at left, living room; left, below, bedroom. Concrete block walls are untreated inside or out, require almost no maintenance. Reinforcing is placed at each vertical joint and concrete is poured into hollows at ends of blocks, forming columns. Wall is completed as it is laid up, fireproof, and not overly expensive. Diagram shows grid of flush ceiling lights which illuminate the rooms, eliminating many portable lamps.



Winter sun penetrates the glass wall, but the overhang reduces insolation in summer. Ceilings inside are of pine, floors of red tile laid over membrane-waterproofed concrete—both means of assuring easy maintenance. House is heated by a forced-air, gas-fired furnace placed in a hall closet. There is no basement, nor any attic.



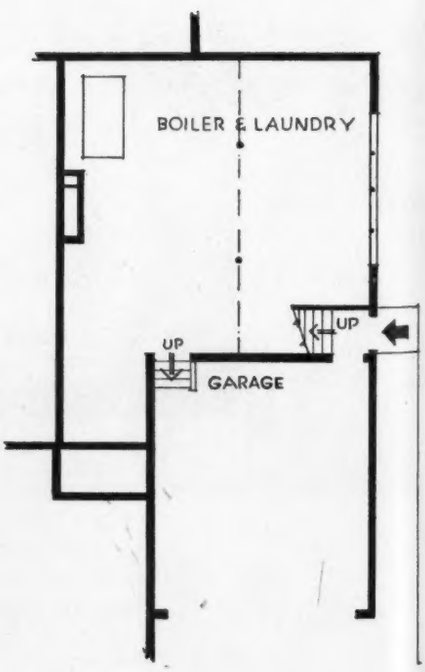
Clue to the whole project is the 40-by-40-foot atrium, with its opening to the sky (placed off center for casual effect and to afford undercover access to garage) and sliding doors to the west. Floor is of washed concrete (which shows the aggregate) divided by wooden strips.

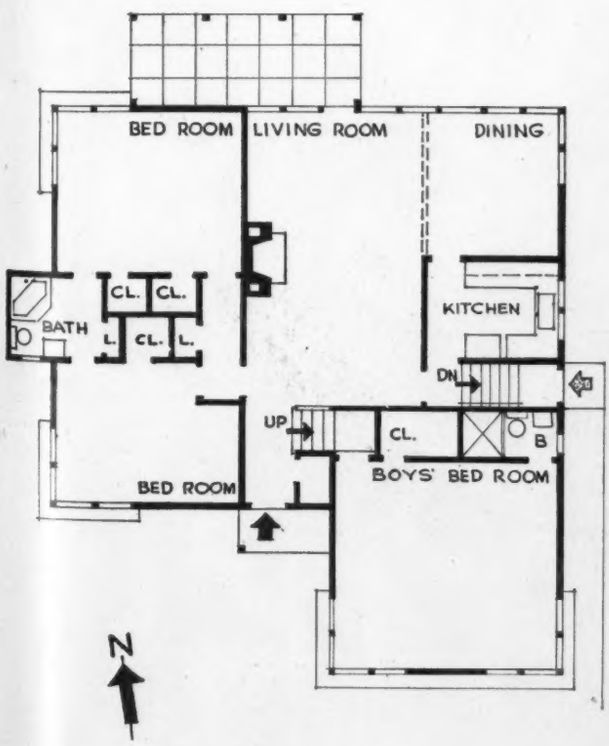
Indiana Dwelling Has Carefully Organized Plan

Miller and Yeager, Architects

Martins Photo Shop

This house, like another in this issue, is the architect's own. It was designed for Ralph O. Yeager and cost, including normal fees, approximately $14,500. In the plan of the main floor, note that the two principal bedrooms are separated by a closet and bathroom and that the boys' bedroom is separated from living areas by closet and bath. The heating system is an oil-fired, forced-warm-air type, with warm and cold air registers in each room. Water is electrically heated. Foundation walls are of concrete block, waterproofed, and construction is of frame with wood sheathing and pre-dipped gray-white shingle siding. The roofing is asbestos shingle. The entire ceiling is insulated with 4″ of mineral wool. Basement ceiling, and garage walls and ceiling, are lined with plywood, and the basement has an asphalt tile floor. On the main floor, walls are plastered and papered and the floors are of factory-finished oak. The interior trim is Ponderosa Pine, and the doors are a flush type, of gum wood. The boys' bedroom has walls of redwood planks 12″ wide, and the fireplace breast is of the same material.




BED ROOM
LIVING ROOM
DINING
CL.
CL.
BATH
L.
CL.
L.
KITCHEN
DN
UP
CL.
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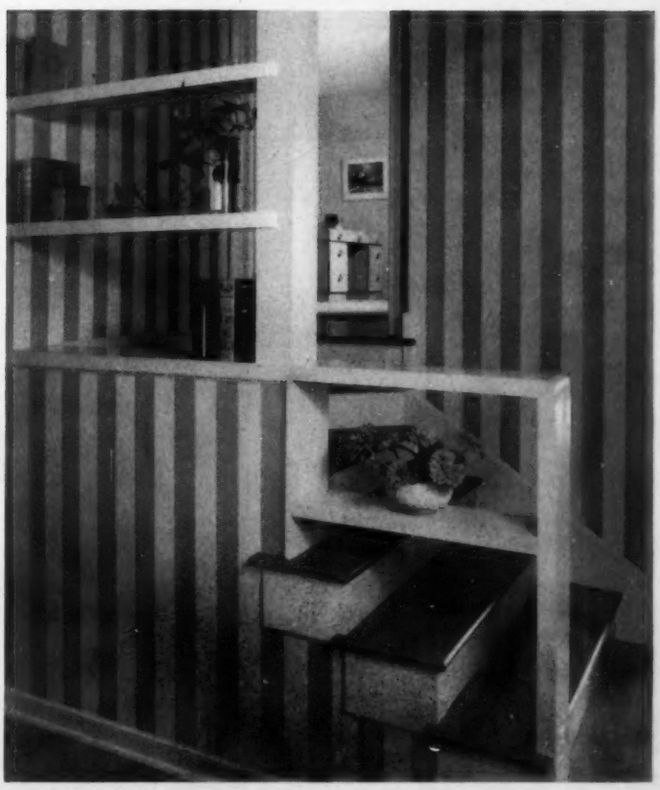
BED ROOM
BOYS' BED ROOM
N

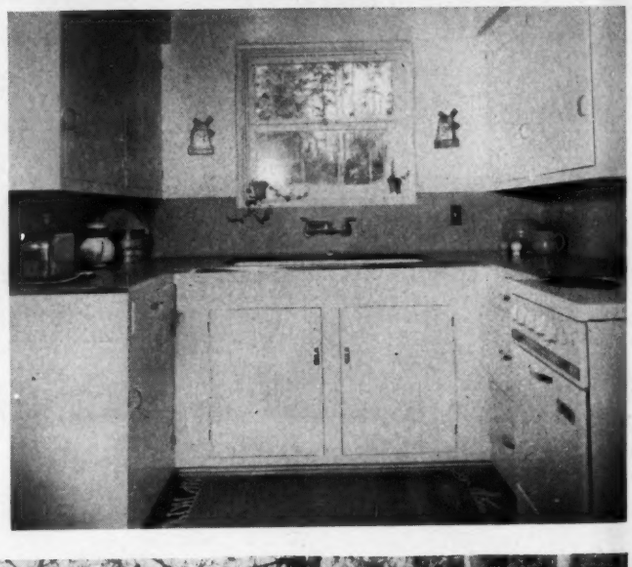


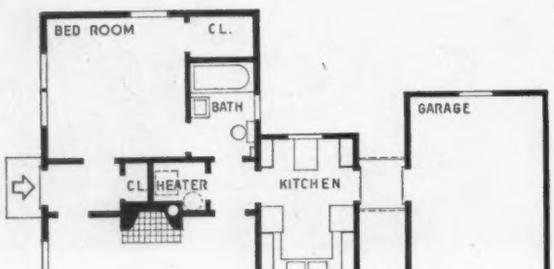
Minimum House Antedates War Housing

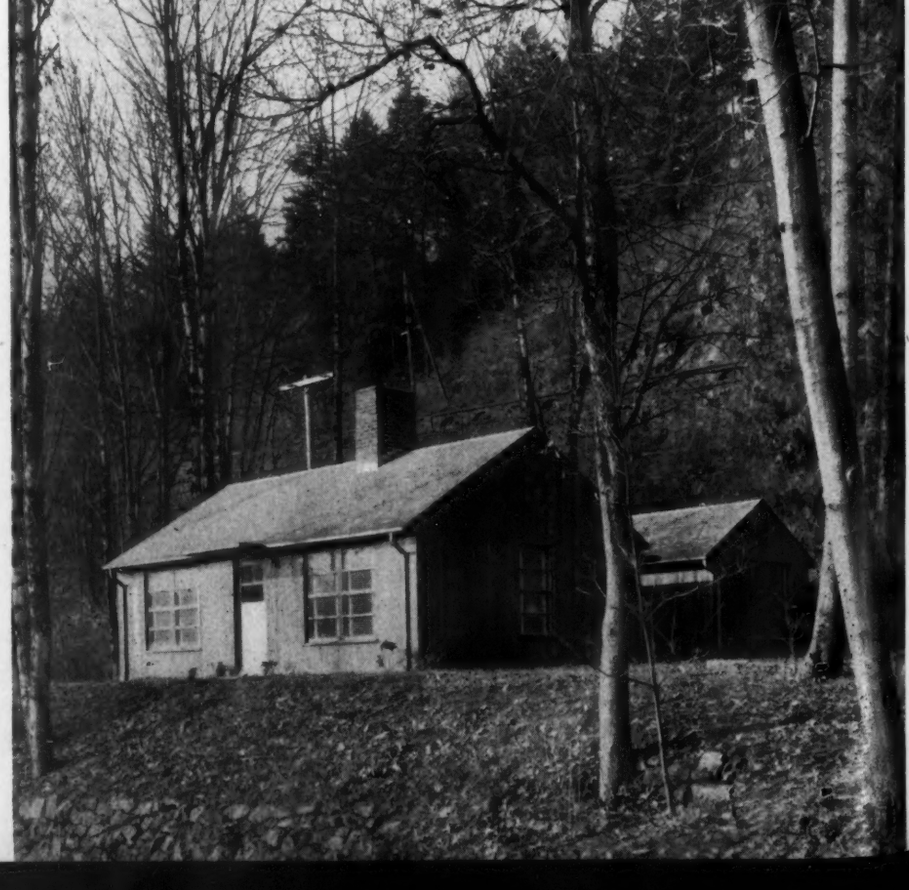
Leonard Delano

Wade Pipes, Architect

Although it was built before Pearl Harbor, this house, for John Endres, is quite close to government standards for one-bedroom war houses. For all that it is not a "minimum" house, nor has it the poverty-stricken architectural treatment which characterizes much war housing. It is heated by an automatic gas furnace and a warm air system in which return ducts from living room, bedroom, and hall run under the concrete subfloor to the heater closet. There is also a fresh air inlet under the floor. All these ducts are of drain tile. Warm air supplies are near the ceiling. Exterior walls are of clear red cedar boarding applied vertically and given a natural finish. The roof is of cedar shingles. Floors are asphalt tile in various colors. Trim and base were applied before interior walls were plastered and formed grounds. Windows are of the awning type, with the lower halves fixed. Flush doors are used throughout. The house is in Oregon, near Portland.







Residence Design for Safety

A check list, prepared by Professor Grace Morin, for the use of architects in so designing homes that preventable hazards may be eliminated

Professor Grace Morin has prepared the following check list on the basis of research and teaching at the college of Home Economics, Cornell University. Originally developed for the Committee on Safety in Housing, a subcommittee of the New York State Home and Farm Safety Advisory Committee, this list is here limited strictly to architectural subjects. The complete check list contains additional matter of interest primarily to non-professional persons. D. Kenneth Sargent, A.I.A., Professor of Architecture, Syracuse University, is Chairman of the Committee on Safety in Housing.

Of necessity, many references are made to recognized fire and safety codes, which define minimum requirements. For specific information, the designer should consult reports and codes formulated by recognized agencies such as: American Standards Association; National Bureau of Standards; National Fire Protective Association; National Board of Fire Underwriters; Underwriter's Laboratories, Inc.; American Gas Association; Forest Products Laboratories; American Public Health Association; and others.

HOUSE PLANNING

The house should be located and planned so that a minimum of accidents will result directly from normal family activities, and so that fatigue and frustration, often indirect causes of accidents, will be substantially reduced. This is a major part of the basic design problem, of producing a house which will afford a satisfying home life, for the individual and the family group, and in relation to the community.

Location:

The house should be located in a homogeneous neighborhood unit. There should be access without undue expenditure of time, energy, or money to cultural, recreational, and employment centers. There should be adequate community amenities such as light, air, open spaces, planting, utilities for service and sanitation, protection from excessive noise, dust, and heavy through traffic.

Space Layout:

There should be spaciousness in living areas, economy of space in working areas, directness of circulation, and ample storage facilities. Planning should be flexible so that space may be converted to varying uses.

1. Areas having closely related functions should be located reasonably near one another, with floors at same level, and with direct circulation.
2. Rooms should be so planned that there is adequate, convenient space for necessary furniture and equipment, with provision for free passageways. The minimum clear width of a hall should be three feet.
3. To prevent eyestrain and fatigue, provision should be made for sufficient illumination, adjustable to particular situations. There should be freedom from glare.
4. The kitchen should be reasonably close to entrance doors, garage, laundry, trash disposal centers.
5. An enclosed service space should be provided adjacent to the kitchen.
6. The circulation from the laundry to the drying yard should be short and all on the same level.
7. Play spaces for children, indoors and out, should be provided near working centers. A covered outdoor space for play in stormy weather is desirable.
8. Rest centers with adequate privacy should be located near working centers.
9. Downstairs toilet and bowl should be provided not too far from indoor and outdoor play centers and work centers.
10. First floor bedroom and bath, not too far from working areas, should be provided for aged or ill persons.
11. Living and recreational spaces should be planned for more than one group and should be located to minimize noise disturbance. For instance, dining room, study, or recreation room might serve as a secondary living room. A workshop is often desirable.
12. Bedrooms should be located for privacy and protection against noise. Access to each bedroom should be possible without passing through another room. Consideration should be given to noise originating both indoors and outdoors.
13. Provision should be made for outdoor space, for airing clothing, bedding, etc., conveniently located in relation to clothing storage spaces and bedrooms.
14. Bathing facilities and nearby supply storage space are needed for small children.
15. Adequate, conveniently located storage spaces are essential.
    a. All parts of storage spaces should be easily accessible.
    b. Storage spaces should be well-lighted, with easily controlled fixtures if necessary.
    c. Storage spaces should have adequate shelving or hanging space, or both, at heights convenient for specific uses, including those of children.
    d. Shelves should be sturdy; those frequently used should be easily accessible without the use of a ladder.
    e. Space should be provided on each floor for storing ladders, to discourage the use of a chair or box to reach high places.
    f. Closets for outdoor clothing should be near entrances.
    g. A closet should be provided near the living room for games, card tables, etc.
    h. Toys should be stored near play spaces and at a height accessible to the child himself.
    i. Convenient space should be provided for baby carriages, bicycles, and other outdoor equipment.
    j. Closets should be so equipped that doors cannot be locked from the inside. Where there are children, inside door-knobs should be low.
    k. Storage space for machines, sharp tools, and firearms should not be accessible to children.
    l. Special provision should be made for the disposal of razor blades.
    m. Brooms, mops, buckets, cloths, etc., should have adequate, convenient storage spaces, at a safe distance from heating appliances.
    n. Special provisions should be made for storing flammable materials. For instance, oil supplies for the furnace should be stored in an underground tank, outside the house, with the top of the tank below the level of the burner. Where the top of the tank is above the burner, provision should be made to prevent siphoning into the furnace room.
    o. Convenient space should be provided for covered rubbish cans to guard against collections of rubbish in attic, closets, basement, etc. Space other than on wood floor or near combustible wall should be provided for metal ash can with cover.
    p. A well lighted, lockable cabinet, out of children's reach, is needed for poisons.
    q. Storage space for washing powders, lye, fumigating and disinfecting materials, etc., should be provided out of children's reach.
    r. Fireproof storage space should be provided for valuable records. A portable container is desirable.
    s. Convenient storage should be provided for a first aid kit.

Stairs and Steps

Falls

1. Stairs should have straight runs rather than winders. Risers should not be more than 7¾" and should be uniform. Treads should be at least 9½" wide exclusive of

nosing, and should be uniform. Slope should be between 30 and 36 degrees.

2. Intermediate landing should be provided. Length and width of landing should not be less than the width of the stairway served.
3. Minimum head room is 6'-8". Treads should have non-slip finish.
4. Top and bottom steps, especially of attic or cellar stairs, should be clearly defined.
5. Any change in floor level requiring steps should be not less than 3 risers high.
6. Continuous handrail should be provided. At open side of stairs, handrail should not be less than 31" high from front of tread. If stairs are 44" wide, or more, there should be handrails on both sides. For children, low handrail should be provided unless balustrade serves as a handrail. Uprights in balustrade should be close enough to prevent child from slipping through them.
7. Gates should be provided at top of stairs, and in some cases at bottom of stairs, if small children are in the home.
8. No doorway should be near top or bottom of stairway (30" minimum distance.)
9. Lighting should be adequate on stairs. Artificial light should be controlled from both top and bottom of stairway.
10. Stairs should not be located in unexpected places, especially outside stairs.
11. Outside steps should be kept to a minimum; if there are more than three risers there should be at least one handrail.
12. Where there are small children it is advisable to have a gate at the top of porch steps.
13. Outside steps should be protected from ice and snow.
14. Outside steps should be placed where they can be adequately lighted. Color should contrast with walks.

Fire

1. Stairs should be enclosed where possible, with door at top or bottom, or both. (Where "pipeless" furnace is used the enclosed stairway is not generally practicable.) If a door is placed at the head of a flight of stairs, there should be a landing at least 30" wide on the stair side of the door. If this landing must be omitted, the door should have a glazed window.
2. Open stairs, particularly from a hall or room having wide doorless openings into other rooms, are a fire menace.
3. A second stairway, located as far as possible from the first stairway, should be provided as a fire escape. (A door or window opening may serve if easily accessible to the ground.)
4. Cellar stairways should be closed at top and bottom with a metal-clad or heavy wood door.

STRUCTURAL HAZARDS

Materials, methods of construction and maintenance should be such as to minimize danger of accidents due to collapse of any part of the dwelling. All material should be of good quality and installed according to generally accepted good practice.

1. No dwelling should be placed on filled ground until it has been satisfactorily tested for ability to carry safely the assumed load.
2. Foundation walls supporting wood or light steel structural members should extend at least 6" above finished grade.
3. Unless local circumstances render it unnecessary, basement walls should be watertight.
4. When the surface of the ground beneath a building having no basement is below the outside finished grade, adequate provision should be made for drainage.
5. Adequate cross ventilation should be provided beneath all wood construction over the ground, so that no dead air pockets exist.
6. Wood should not be placed in contact with the soil unless entirely below permanent water level, or unless it has been subjected to an approved preservation treatment.
7. All wood used in basements, such as stair stringers, door frames, partitions, or posts, should rest on raised bases, such as poured concrete bases that extend above the general floor level.
8. No masonry construction should be supported on any form of wood construction.
9. Wood construction embedded in or laid on masonry or concrete that is in direct contact with the ground should be given an approved preservation treatment.
10. All parts of dwellings should be designed to support safely their own weight and all other loads to which they may be subjected.
11. Vertical faces of dwellings and sloping roofs should be able to withstand prevailing wind loads.
12. Adequate flashings should be used over doors and windows and around chimneys to provide ready drainage of water.
13. Rain gutters and leaders should be so placed as to prevent accumulation of water.
14. No lumber showing evidence of decay should be used.
15. Water pipes should be suspended from the joists in basements to prevent the absorption of condensation water by the wood.
16. Precautions should be taken against decay caused by insects or moisture. In zones where termite infestation is serious, special provision should be made.

    Foundations should be of impenetrable concrete or masonry.

    Stumps, chips and litter should be removed from under the house.

    Adequate ventilation should be provided for the space beneath the house.

    Vents should be screened.

    Clearance between the ground and woodwork should be at least 6" outside the foundation, 18" inside.

    For the most effective protection, shields of copper or other durable metal should cap the foundation wall. For complete protection these shields should be continuous and extend entirely across the foundation wall, should project 2" or more on either side, and should be bent down at an angle of 45 degrees.

    Posts, piers, pipes, and other structural members in contact with grade should be shielded.

    Surfaces which are difficult to inspect should be most thoroughly protected.

FIRE HAZARDS

Location of buildings, space layout, structural materials, equipment and furnishings, methods of design and construction, installation, and maintenance should be such that: probability of starting fires will be minimized; spread of fires will be sufficiently retarded to permit the escape of occupants from buildings; adequate facilities will be provided for escape in case of fire.

From the standpoint of fire hazards, all buildings should be of at least fire resistive* construction. However, for low-cost dwellings, fire resistive construction may not be feasible, but fire hazards can be restricted through care in the location of buildings; in space layout; through reasonable precautions in the construction and finishing of roofs, walls, and floors; through fire stopping; through proper installation of chimneys, furnaces, other heating appliances, and electric wiring.

Location of Buildings:

Inflammable buildings should be placed far enough apart to prevent the spread of fire by radiant heat.

1. A clear space of not less than 10' should be left between detached dwellings.
2. On a farm, a clear space of 150' should be provided between the house and other main farm structures. For weather protection it may be desirable that major buildings be connected, in which case the buildings should be well separated by connecting passages and should be provided with a fire barrier at the center consisting of a masonry or metal partition and a metal-covered, self-closing door. If the roof is of frame construction, the partition should extend through and at least 18" above it.
3. The relative position of the farm house and the barn should be such that the prevailing winds will not blow from one to the other, but across a line between them.

Space Layout:

See section on House Planning.

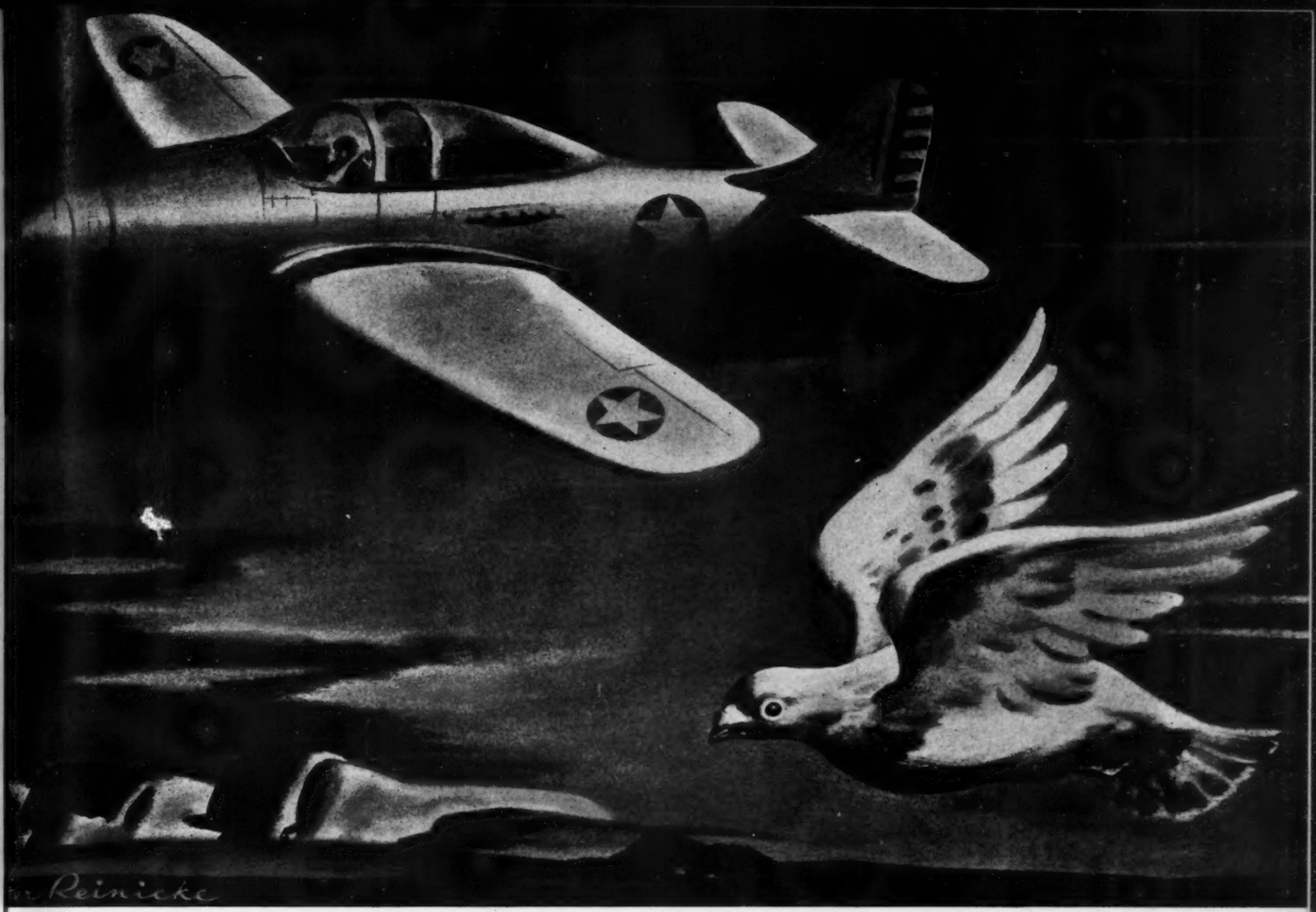
Structural Features:

Roofs:

1. Roof coverings should have sufficient insulating value to prevent ignition of the boards supporting them by either flying sparks or radiant heat.
2. Materials such as metal, tile, slate, and asbestos are fire resistive. Protection by

(Continued on page 84)

*Fire resistive materials include those which upon test show that they will resist fire or will delay its spread long enough to permit the escape of occupants under ordinary conditions.



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ARMSTRONG'S LINOLEUM
LINOFLOR AND LINOWALL
Custom-Laid or Standard Designs

Residence Design for Safety

(Continued from page 82)

metal roofing is increased by placing asbestos felt or similar insulating material between roofing and boards.

3. Asphalt shingles and composition roofings of good quality are safe from ignition by sparks. Flimsy grades of manufactured roofing should be avoided, although they may be more or less fire resistive while they remain in good condition.
4. If wood shingles must be used, edge-grained shingles should be insisted upon, poor grades avoided.
5. Where the roof is of wood shingles, spark arresters should be installed on chimneys.

Exterior Walls:

1. Among common exterior wall materials the range in fire resistance is: board finish, as the least fire resistive; then, in order, phenol plywood, stucco on wood lath, stucco on metal lath, masonry veneer over wood frame, load bearing masonry walls. Well-maintained paint coatings will slightly increase the fire resistance of wood to outside fire sources.
2. Simplicity of exterior design reduces fire hazards since projections such as eaves, cornices, porches, and dormers afford greater opportunity for ignition from a nearby fire than do plain surfaces.

Interior Walls, Floors and Ceilings:

Since most fires originate within buildings, emphasis should be given to the importance of interior structural provisions that will aid in preventing this source and spread of fires.

1. Surfaces of interior walls, floors, and ceilings are the first to be attacked by fire from inside origins. Relative protection against fires given by the usual interior finishing surfaces is approximately in the following order, beginning with the least fire resistive: plaster board, plaster on wood lath, plaster on plaster board, and plaster on metal or wire lath. Gypsum plaster has been found effective as it is not likely to fall off during fire exposure and high temperatures do not penetrate it rapidly.

Fire Stopping:

1. Walls—Wherever wood or other combustible building material is used in wall construction, all hollow wall spaces should be closed with incombustible fire-stopping material at each floor level and at the level where the roof rafters connect with the wall. The fire-stopping material should fully fill the spaces in walls opposite the hollow floor spaces and should extend at least 4" above them.
2. Chimneys — Spaces around chimneys should be fire-stopped with incombustible material.
3. Pipes and ducts—Where any pipe or duct passes through a floor, the space between the pipe or duct and the floor construction should be fire-stopped. Where the installation of pipes or ducts in walls or floors requires removal of fire-stopping, spaces around pipes or ducts should be filled with incombustible material.

(Continued on page 85)

4. Stairs—Header beams should be placed beneath stairs at top and bottom of the stairway. When a stair run is not entirely within one room, or where a closet is located beneath the stairs, a header should be so placed under the stairs as to cut off communication between portions of the stairs in different rooms or between the closet and the room in which it is placed.
5. Sliding doors—Wall spaces into which sliding doors fit should be completely fire-stopped at top, bottom, and sides.

Stairs:

See section on Stairs and Steps

Storage:

See section on House Planning

Basements:

1. The basement, if it houses the heating plant or fuel, should have a smoke-tight, fire-resistive means of separation from the rest of the house.
2. If possible, the first floor should be of fire resistive or incombustible construction.
3. A double first floor with incombustible material between the two board layers adds appreciably to fire-resistance and smoke-tightness. A basement ceiling of plaster board, asbestos board, or plaster on metal or wire lath offers some protection. This same sort of finish for a space of several feet above and around the furnace will help to prevent fires.
4. The door leading from the basement to the first floor should be self-closing and covered with metal on the basement side, or a flush door not less than 1⅜ thick.

Garages:

1. When a garage is located within a dwelling, walls, partitions, and ceiling of the house should be protected on the garage side by fire resistive construction.
2. Garage floors should be incombustible.
3. Openings from dwelling to garage should be restricted to one, with a door covered with metal on the garage side, or flush door not less than 1¾″ thick with no glass. The sill should be raised at least 7½″ above garage floor level.
4. Heating devices in garages should be installed in approved separate rooms, or should be of an approved type installed near the ceiling.

Chimneys and Smoke Pipes:

1. Chimneys should be of masonry, reinforced concrete, or other incombustible materials. They should be set on a firm foundation and should be built solid from the ground up, not depending for their support on any wood construction and not supporting any construction.
2. Chimneys should be built at least 2′ above flat roofs. For sloping roofs, chimneys should not be less than 12″ above the roof which the chimney penetrates, and not less than 12″ above the highest ridge within 10′ of the chimney. It may be necessary to increase this height if nearby trees or houses cause downdrafts. Unless the chimney is provided with a special cap or top, the chimney lining should project not less than 2″.

(*Continued on page* 86)

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Residence Design for Safety

(Continued from page 85)

3. No wood or other combustible material should be placed within 2″ of the outside facing of a chimney, except that this distance may be reduced to ½″ where there is a complete facing of asbestos insulating board or other incombustible material not less than ¼″ thick.
4. Masonry chimneys should be lined throughout with fire-clay flue lining with joints staggered in relation to masonry courses. The flue must be absolutely air-tight from bottom to top.
5. The flue must be straight and uniform in size throughout.
6. A tight-fitting cleanout door should be provided at the bottom of each flue.
7. Vent flues for gas heating appliances (water-heaters, stoves, ranges) should have a flue area equal at least to the combined cross-sections of the pipes entering them. Such flues, unless enclosed in masonry walls, should be of cast-iron pipe or other incombustible material and should vent through and above the roof.
8. Chimney openings not in use should be covered with a metal cap.
9. Every smoke-pipe should connect with a smoke-flue by means of a tight joint. The smoke connection should be as short and straight as possible and should slope upward to the chimney.
10. Smoke-pipe should enter chimney through a fire-clay or metal thimble, or a flue ring of masonry. Neither the pipe nor the thimble should project into the flue.
11. Not more than one smoke-pipe should be connected to a flue. A vent from a gas-burning appliance not exceeding 13 sq. in. may connect into the same flue as a smoke-pipe, provided the connection is above the smoke-pipe.
12. No smoke-pipe should pass through a combustible ceiling, floor, or roof.
13. Smoke-pipes should not pass through combustible partitions unless protected by double metal ventilated thimbles 8″ larger in diameter than the pipe, or 4″ larger in diameter than the pipe if space between pipe and thimble is filled solidly with approved incombustible insulating material, or unless protected by a concentric sleeve 2″ larger in diameter than the pipe with the space filled solidly with incombustible insulating material and the outside surface of the sleeve distant at least 2″ from combustible material.
14. The clear distance in all directions between a smoke pipe and combustible construction, including plaster on a combustible base, shall not be less than 12″; this clearance may be reduced one-half when such construction is protected by cement-asbestos board not less than ¼″ thick, or equivalent covering, extending the full length of the smoke pipe and not less than 12″ beyond it on both sides, or when plaster is on metal or wire lath.
15. A choke or cross-damper should be placed in the smoke pipe and a check-damper should be located between cross-damper and chimney.
16. Provision should be made for ready access to the smoke-pipe for cleaning.

(Continued on page 88)

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TO keep workers off the sick list and on the job, industrial plants are more carefully planned today than they ever have been before. Every effort is made to provide sanitary working conditions. Health records show that absenteeism drops—employees are more efficient—when adequate washroom facilities are provided, with plenty of soap, hot water and individual tissue towels.

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SAVING WAYS IN DOORWAYS

KINNEAR ROLLING DOORS

Residence Design for Safety

(Continued from page 86)

Heating Equipment:

Furnaces, Stoves, and Ranges:

1. Furnaces should be of approved design, should be installed by competent workmen according to approved methods, and should be inspected and overhauled periodically.
2. Furnaces should be mounted on approved incombustible bases and should not be located nearer than 24″ in any direction to woodwork or other combustible material, including plaster on a combustible base. When the furnace is insulated in an approved manner, this distance may be reduced to 18″. When the combustible material is protected with ⅜″ gypsum board under ⅛″ asbestos board or with ¾″ cement plaster on metal lath, distance may be reduced to 6″.
3. Where furnaces are supported on a floor not directly on the ground, an air space should be provided between the equipment and the floor.
4. Warm air ducts, fittings, and connections should be made of metal or other approved incombustible material. The clear distance between exposed warm-air ducts leading from the furnace should not be less than 1″ from combustible material unless such construction is covered with asbestos paper weighing not less than 12 lbs. per 100 sq. ft. and covered with galvanized sheet metal or equivalent approved protection. No warm-air duct should enter a floor, partition or other construction within 6′ (in a horizontal direction) of the furnace unless it is covered with asbestos paper ⅛″ thick, or equivalent. Clearances may be reduced if manufacturer recommends.
5. Cold air ducts within 6′ of their connection with the furnace should be of metal or other approved incombustible material.
6. No return duct of a mechanical circulation warm air system should be permitted from a kitchen, bath, or garage.
7. Registers in woodwork or combustible floors should be surrounded with a border of incombustible material, not less than 2″ wide, held securely in place; or should be installed in some other approved manner.
8. When a register box is placed in a combustible floor directly over a one-pipe furnace or floor furnace, the register box should be constructed double with a vented air space of not less than 4″ between, except when the warm air passage is surrounded by a cold air passage.
9. With the exception of wall-register types of furnaces, floor furnaces should not be placed closer than 6″ to the nearest wall. Wall-register types should not be placed closer than 6″ to a corner.
10. Floor furnaces should be so placed that a door, curtain, or similar object cannot be directly over, or less than 12″ in front of, the register of the furnace.
11. When steam or hot water pipes pass through combustible floors or partitions or other combustible construction, there should be, on all sides of the pipe, an open space enclosed at the ends with incombustible material.

(Continued on page 90)

When it comes time to go *Window Shopping*

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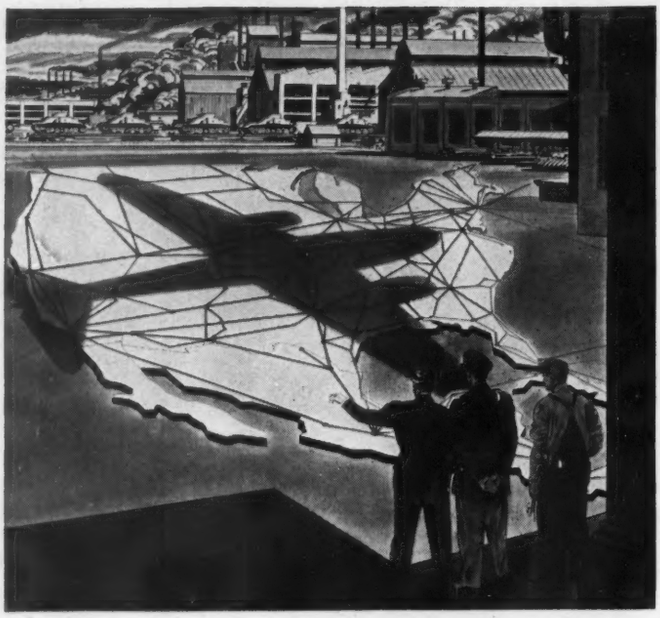

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Residence Design for Safety

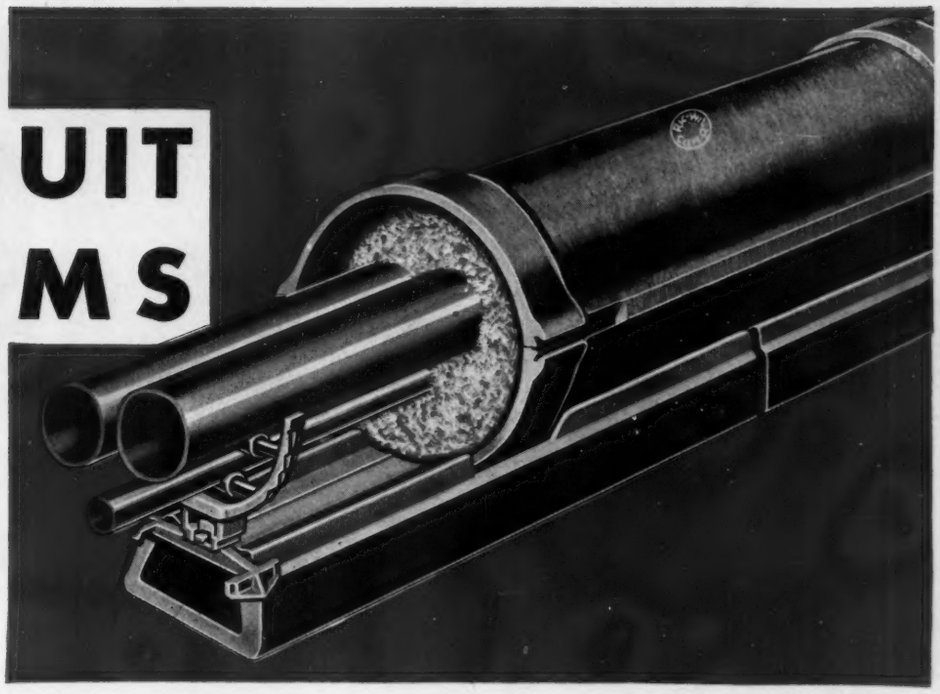
(Continued from page 88)

12. Coverings or insulation used on steam and hot water pipes should be of incombustible material.
13. Water heaters should be connected to smoke flues or outlet pipes.
14. A stove or range burning solid fuel, the lower part of which is a fire-box, should be set on a hearth supported by masonry and extending not less than 6″ on all sides beyond the appliance except that when the stove or range has legs giving an open air space of not less than 5″ below the appliance it may be set on sheet metal underlaid with not less than ¼″ of asbestos or other equivalent approved incombustible material. When the appliance has an ash-box under the entire fire-box and is set on legs giving an open air space of not less than 5″ below the appliance, it may be set on sheet metal alone.
15. No stove or range should be placed within 24″ of combustible material except if such construction is protected by a shield of galvanized sheet metal or other equivalent incombustible material extending from the floor to one foot above and one foot beyond the sides of such appliances, when the distance may be reduced one half.
16. Domestic gas ranges should have a distance between the burner and a combustible floor of not less than 12″ unless the floor is protected with asbestos board under sheet metal or other approved incombustible material. The oven back or side of the cooking top should not be less than 6″ from combustible surfaces unless such surfaces are protected with satisfactory incombustible material.
17. A gas stove should be so located that no draft can extinguish its flame or can cause the flame to ignite curtains or draperies.
18. Gas stoves should be connected with rigid metal pipes.
19. No gas log or gas grate should be installed except in a fireplace of approved construction and must be connected with the smoke flue or outside pipe.
20. Gas meters should be located at a safe distance from possible flames or sparks. They should never be installed near furnaces and should not be within 3 ft. of electric meters or other appliances.
21. Gas pipe should be securely fastened in place so that joints cannot be strained by movement of the pipe. The pipe should not sag or be bent in any way to permit a low point in which liquid could collect and partly shut off the gas. Grounding wires of telephone equipment, electric light currents, etc., should be connected to cold water pipes rather than to gas pipes.
22. Bottled gas installations should be made in accordance with authoritative codes effective for that type of fuel. Instructions of distributors should be followed.
23. Stoves and furnaces should be of such size that enough heat can be generated to keep the house at proper temperature even in very cold weather without crowding or overheating them.

(Continued on page 92)

TILE CONDUIT SYSTEMS

FOR UNDERGROUND STEAM LINES



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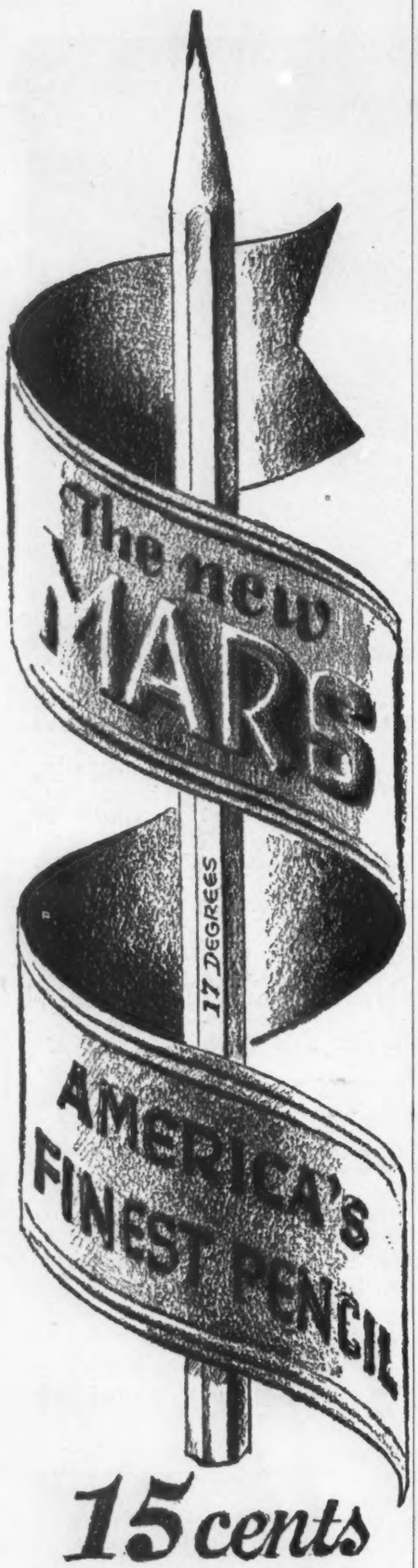

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Residence Design for Safety

(Continued from page 90)

Fireplaces:

1. It is important that a fireplace have correct dimensions, to guard against hazards from sparks thrown out by downdrafts.
2. A throat damper is desirable. The lid should be hinged at the back to prevent downdrafts.
3. Walls of fireplaces should not be less than 8″ thick. If built of stone or hollow units, they should not be less than 12″ thick. Faces of minimum-thickness walls must be lined with fire-brick or other suitable fire-resistive material.
4. Fireplace hearths should be of suitable incombustible material, supported on masonry or reinforced concrete. Combined thickness of hearth and supporting masonry or slab should not be less than 6″. Hearth should extend not less than 8″ beyond each side of the fireplace opening and at least 16″ in front of it. Ash pit below hearth should be airtight and should have a tight-fitting cleanout door.
5. No combustible construction should be placed within 4″ of the back wall of a fireplace. No combustible construction or finish should be placed within 8″ of either side or of the top of the fireplace opening. No combustible mantel shelf should be less than 12″ above the opening.
6. A fire screen should be provided.

Adequate facilities must be provided for ventilation of rooms where heating equipment is in operation. Easy means of exit should be provided for use in case of fire, etc. Do not omit flues when heater design requires them.

Shelves should not be placed above heating appliances, especially stoves or heaters. Sufficient convenient space should be provided to discourage the placing of towel racks, clothes lines, etc., above or very near heating appliances, especially where there are open gas flames. Fuel storage should not be near a stove or furnace.

Electrical Equipment:

1. All electrical wiring and equipment should be of approved quality and design and should be installed and inspected in accordance with the provisions of an authoritative code.
2. Circuits should be protected with circuit breakers or fuses.
3. Fuses, switches, and other devices which may be used to open circuits should be enclosed in metal boxes.
4. Switches, especially the main or service switch, should be placed in a convenient location.
5. Enough conveniently located service outlets should be provided to minimize the probability of attaching portable appliances such as irons, toasters, etc., to a lamp socket, or the attaching of too many appliances at one time to one service outlet.
6. Lamp sockets should be placed to insure no contact between light bulbs and draperies, decorations or other flammable materials.

(Continued on page 94)

. . . with

MONTGOMERY ELEVATORS

THOUSANDS of passenger and freight installations throughout the country have proven that Montgomery Elevators are more efficient and economical. Accurate records on Montgomery installations show that practically no major repairs have ever been required. Too, original cost of Montgomery Elevators is generally lower than that of other makes. New buildings and remodeling projects now being planned will require the finest in elevators.

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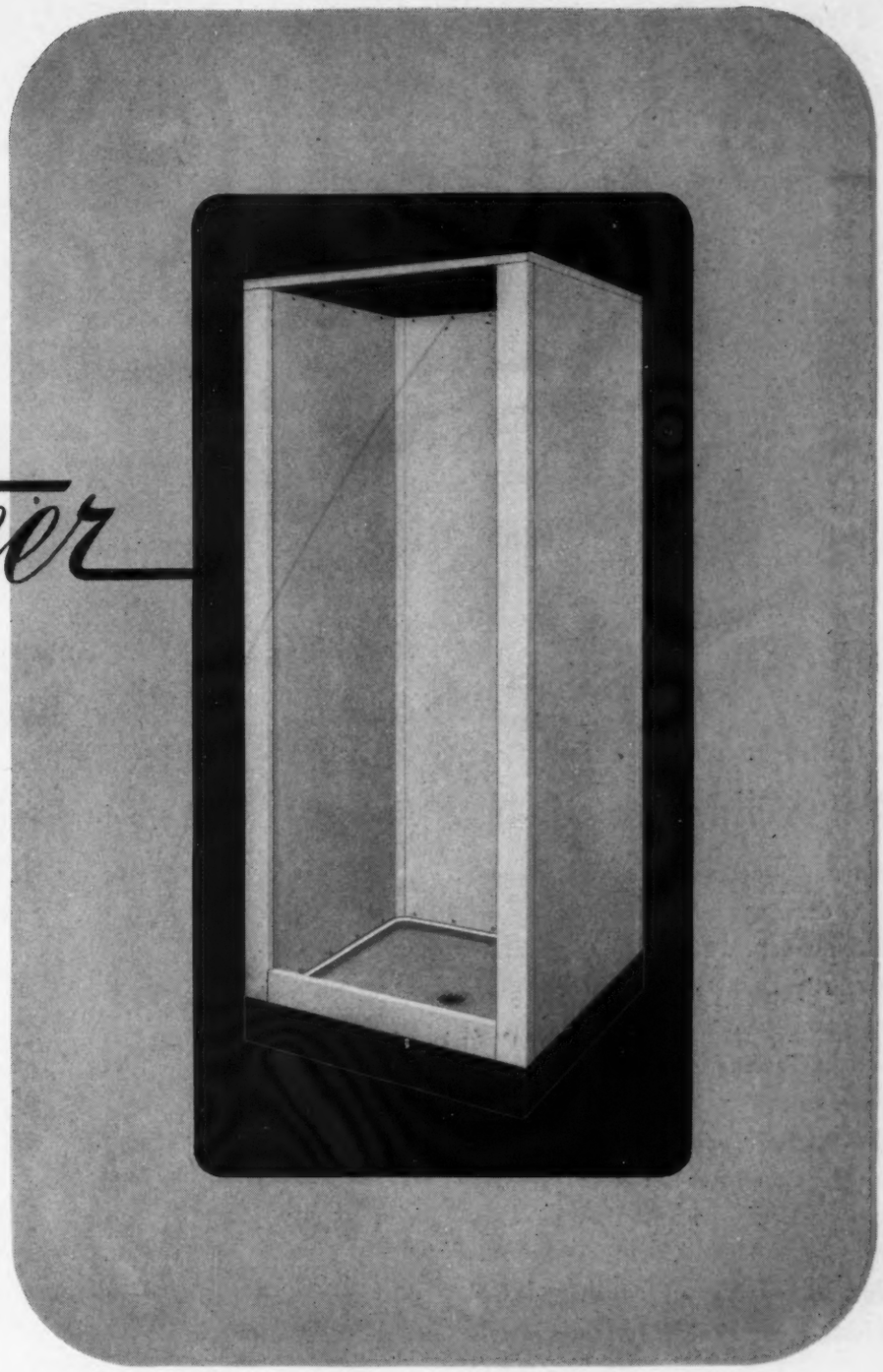
FIAT'S *Volunteer*



REAL FACTORY PREFABRICATION

makes erection on the job easy . . . puts extra profits in the job for the plumber

This picture shows factory assembly line workmen attaching spring tension corner joints to back wall panel.

Metal flange for cabinet wall attachment is cast integral in the base; this patented Fiat feature makes a positive water tight joint and simplifies installation of wall panels on the job.

Prefabrication, the Fiat way, saves valuable time in installing the Volunteer. The hard work on the assembly is done at the factory on a production basis. The regular Fiat receptor has the metal flange for cabinet wall attachment cast integral in the base (a patented feature). Another important detail of prefabrication of the Volunteer is the permanent fastening, at the factory, of the front pilaster columns to the side walls and the spring tension corner joints to the back wall. Only a few metal working screws placed in holes punched in position are required to complete the fastenings. The Volunteer is the simplest, most easily assembled shower cabinet ever designed. Can be completely erected by one workman in 18 minutes. Available for essential civilian use on adequate priorities.

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Arkwright
TRACING CLOTHS
AMERICA'S STANDARD FOR OVER 20 YEARS

Residence Design for Safety

(Continued from page 92)

7. Gas pipes should not be used for grounding electrical conductors.
8. Provisions should be made for storage batteries, such as are used in private electric plants, so that heavy metal objects will not be placed where likely to fall across the connections. Batteries should be stored in a light, well ventilated, easily accessible place.

Lightning:

Properly installed and well-maintained lightning rods will provide practically complete protection against damage to buildings by lightning. Farm buildings, especially, should be protected.

Lightning rods should be installed in accordance with the recommendations of an authoritative code and should be inspected periodically.

A lightning arrester should be connected to the lead-in wire from an outside antenna to a radio set. A double-throw switch should be provided so that outside antennae can be disconnected from the radio set and connected with the ground during electrical storms.

Fire Fighting:

1. Every building should have an adequate water supply, installed and maintained in good working order. A water faucet and garden hose should be located where there is ease of access in case of fire. Water pipes should be protected against freezing.
2. Control devices for gas and water should be located so that they can be operated quickly in emergency.
3. If possible, a sprinkler system should be installed on basement and garage ceilings.
4. Easily accessible space should be provided for fire extinguishers convenient to fire hazard centers such as kitchen, laundry, basement, attic, and garage. To guard against freezing, soda-acid and foam extinguishers should be protected against temperatures less than 40 degrees F. Where there is apt to be burning grease, a foam, carbon tetrachloride or carbon dioxide extinguisher should be provided. Where gasoline is stored in quantity, provision should be made near at hand for a carbon tetrachloride or foam type of extinguisher. Only approved fire extinguishers should be installed.
5. Ladders of proper length and construction should be kept in close proximity to buildings with combustible roofs, especially on farms. It is desirable to provide convenient storage for two light, strong ladders, one of which should have a strong hook for hooking over the ridge pole.

FALLS AND MECHANICAL INJURIES

It is clearly essential that space layout and construction should be such as to minimize the danger of falls and other mechanical injuries. Attention has been called to many of these hazards under sections on house planning, stairs and steps, and construction. Consideration should also be given to the following:

1. Floors should be even, with no abrupt changes of level. They should be nonslippery, especially in kitchen, laundry, and bathroom, including shower. Outside floors should be protected against ice and snow.
2. If porches are more than one step above grade, strong railings at least 42" high should be provided. Palings should be close enough together to eliminate the danger of children pushing through them.
3. Toe boards should be provided on high porches to prevent articles from falling on persons below.
4. Unguarded floor openings and loose covers over floor openings should be avoided. Every opening through which a ladder passes should have a railing on three sides. The railing should be substantial and at least 40" high.
5. Windows should be of such a type and so located as to be easily cleaned from the inside. Windows should be either high enough to prevent persons from falling out, or provided with properly fastened screens or bars.
6. Doors should be so located and hung in such a way as to guard against collision with them. Open cupboard doors are a special hazard. Doors in upper halls should open into rooms rather than into halls. Latches, doorknobs and other door fastenings should be so designed and placed that fingers will not be pinched by them. Swinging doors, where feasible, should each be equipped with a small window.
7. A gate at a kitchen door may be desirable to prevent small children from coming into the kitchen while cooking is being done.
8. Bath tubs and showers should be provided with a firm hand-grip, of material other than porcelain. In a bath tub the hand-grip should be vertical and of sufficient length to be used by a person either sitting or standing. A safe and convenient container should be provided for soap. Toe space should be provided at the outside edge of the bath tub. No bath tub should be located under a window which is to be opened.
9. Faucets should have metal or composition handles rather than porcelain.
10. Sharp-edged equipment and furniture should be avoided, and all features that permit the possibility of pinched fingers should be eliminated.
11. Sufficient electric outlets should be provided to offset need for long extension cords.
12. Electric light switches should be so located as to enable illumination of a room before one enters it. For rooms frequently entered from more than one door, dual control switches should be provided at each entrance.
13. Night lights should be provided where

(Continued on page 96)

DREAM HALLS OF TOMORROW

NO WONDER people dreamed of marble halls and marble dresser tops in the pre-plastic age. Marble was enduring, non-warping and took a beautiful polish. But today man-made Formica laminated plastic adds luxury qualities no natural material from quarry, mine or forest ever had. Formica will not buckle, crack or chip. It resists wear, moisture, and chemicals. It can be given a wide range of colors. It takes a high polish. Fabrics, wood-veneers, and mosaics can be incorporated. If the hall of your particular dream is a sandwich bar, school or factory restaurant, hotel, theatre, store, bank or public building requiring table, counter or furniture tops, interior paneling or outside decoration you'll find Formica the material of your dreams.

THE FORMICA INSULATION CO., 4621 SPRING GROVE AVE., CINCINNATI, O.

Residence Design for Safety

(Continued from page 94)

there are unexpected stair openings, doors or other dangerous places which cannot be eliminated, especially in houses where there are elderly people.

14. In bedrooms, provisions should be made near each bed for control of a light source.
15. Lowhanging and projecting pipes, particularly in the basement, should be painted a color contrasting with surrounding surfaces.
16. Clothes lines should be easily reached but should be above head height.
17. In localities where there is snow, sloping roofs above entrances, porches, steps, or walks should be equipped with snow guards.
18. Entrance doors should be protected by an overhanging roof.

BURNS AND SHOCKS

1. In planning the location of electrical switches and outlets it must be remembered that shock may be received by touching electrical apparatus such as a metal switch or piece of electrical equipment when standing on soil or a wet floor, or by touching electrical apparatus, including the telephone, and at the same time touching water, or a pipe, radiator, water faucet, or other metal object which may have a direct connection with the soil.
2. Non-metallic light sockets and switches should be used in places where the floor is apt to be damp or the hands wet, such as kitchens, bathroom, laundry, and basement. Wall switches should be provided, but if a pull-chain fixture seems unavoidable, insulating links should be used. It should not be possible to reach a switch, light socket, or electrical appliance from the bath tub or wash basin.
3. Provision should be made for grounding the framework and other metal parts of appliances, such as washing machines, which must of necessity be used with wet hands. If the floor is of concrete, a wood platform should be provided.
4. It is desirable to minimize the possibility of using portable electrical appliances in basement, laundry, or bathroom. If provision must be made for the use of a portable electric iron in the basement or laundry, the outlet should be located far enough away from a set tub to prevent a person touching the tub while using the iron.
5. If provision must be made in a bathroom for the use of an electric heater, even though only occasionally, the heater should be installed permanently and equipped with a wall switch.
6. Electric outlets should be located so that cords may be as short as possible to minimize the possibility of strands becoming broken because of frequent bending and kinking of the cords. They should be at a safe distance from pipes or radiators.
7. Outlets should be located high enough to be out of reach of small children and provision should be made for plugging or covering them when not in use.

CORRECTION

Dear Editor:

I am very much interested in the September issue of NEW PENCIL POINTS, especially the *Discussions on Urbanism*. I note that the little table reprinted from our Bulletin is dated August 1, 1943. This should be August 1, 1942.

The table is quite out of date. It was based on many tentative points in the Urban Land Institute plan which were abandoned in the actual drafting of the Wagner Bill. For example, the Wagner Bill does not propose local land commissions operating under Federal Charter, but leaves the type of local organization wholly to state legislation. The idea of combining the functions of city planning and land assembly, which was also suggested for discussion last year, was not carried over into the Wagner Bill. Some questions may arise as a result of publishing the table at this time, and I felt you would want to have this information at hand.

Charles T. Stewart, Director
Urban Land Institute, Washington, D. C.

We regret the mistake mentioned in the preceding letter and appreciate its being brought to our attention by Mr. Stewart.
—Editor

Plan now on MEDUSA
WHITE CEMENT FLOORS
IN POSTWAR BUILDING

Among the many new products and processes for postwar buildings are White Cement Floors. These floors are past the blue-print stage, for they have been built, tested and found practical during the war—therefore, you can include them in postwar plans. Because of their high light-reflecting value, and their white, clean, smooth and sanitary surface, such floors are perfectly suited to hospitals, schools, food and other manufacturing plants demanding sanitary conditions. Medusa White Cement is built into the floor and is not a surface coating—too, they can be layed over the top of old concrete floors. White Cement Floors should be made with Medusa White, the original White Portland Cement, the only white cement with a 33-year record of successful use. If you are planning postwar building, write today for complete information on Medusa White.

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THIS GIVES THE ANSWER

Ever since graded pencils were first invented, their relative blackness has been roughly estimated by hand and eye. Now Eagle technicians determine this quality with utmost precision.

First, the pencil is weighted to average drawing pressure and inserted in an exclusive Eagle Shading Machine which moves a sheet of paper back and forth beneath the point. On the resulting chart, the relative blackness of the shading produced depends on the grade of the pencil, and on that factor alone. This chart is then placed under the electric eye of a Reflectometer calibrated to the black and white glass standards shown, and the dial tells the blackness of the shading to a fraction of one percent.

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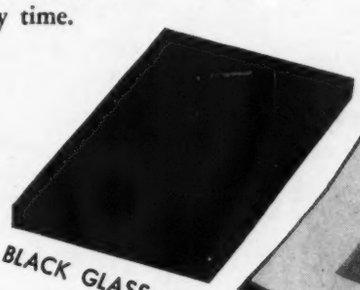

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(Continued from page 22)

Manufacturer's Literature

Publications mentioned here are all 8½ x 11″ unless otherwise specified and will be sent, free of charge, upon request. When writing for any of the literature noted here, please mention NEW PENCIL POINTS.

Elevators and Their History

An arrestingly illustrated booklet which brings attention to elevators via the historical interest road has just been published by an elevator manufacturer. The introduction to the history of lifting methods is made with the story of how the Egyptians raised the stones of the pyramids (a version of a method which may be true but which is not accepted by all students of history) and goes on to the dumb-waiter beside the mantel in Thomas Jefferson's home at Monticello, then on to John D. Rockefeller's carriage lift in his stables at Pocantico Hills, and finally to the Long Island hostess' trick tea-table lift which rose through the floor of the porch in front of the eyes of the Prince of Wales.

Besides the light touch there runs the serious story of Sedgwick's own elevator improvements and expansions. (24 pages and cover. Sedgwick Machine Works, Inc., 150 West 15 Street, New York.)

Light From Floors

A good piece of instructive text, with references to current publications on lighting, accompanies the charts and photographs telling of the value of light-colored floors as an aid to vision in the booklet issued by the Universal Atlas Cement Company, 135 East 42 Street, New York.

Data is given on the value, construction, and maintenance of light-reflecting floors built with white cement. Stress is laid on the advantage to production when such floors are used in industrial plants. The reduced cost factor is also treated as an important one. Recommended practice for construction of white cement concrete floor finishes is given: preparation of base, aggregates, mixture, consistency, placing and compacting, finishing and trowelling, protection and curing, cleaning and treatment . . . all are explained. (24 pages)

Prefabrication for Houses

A booklet describing prefabricated housing is illustrated entirely with full-page photographs through which the story runs in captions. Shown is the assembly plant where materials emerge as complete wall and ceiling sections, including doors, windows, and wiring. Joinings are pictured and described in detail. Methods of shipment, arrival of material at the site, methods of erection, exterior and interior views—all are given.

The idea on which the booklet is conceived is a good one, the photography well chosen. This booklet promises to be of sufficient interest to the architect-reader to make it popular. (24 pages, 8¼″ x 9¼″. The Upson Company, Lockport, N. Y.)

Plywood—Its Uses

"In Service on All Fronts" is the title of a booklet issued on the new developments which the war has brought to the plywood industry as well as on the peace-time applications of these developments. Plywood products, flat, moulded, metal-faced, waterproof, and tubular are shown. The Army's new metal-faced plywood powder box is given special attention as well as the molded tubular radio masts made for the Signal Corps. Aircraft and boat parts are included. A view is given showing the assembly of the layers—mahogany face, poplar core, mahogany back, all intermingled with thin sheets of phenol-formaldehyde glue film. Also a photograph of one of the hot-plate hydraulic presses and one of the huge "cookers" used in production. (12 pages, United States Plywood Corporation, 616 West 46 Street, New York, N. Y.)

POSTWAR WEISWAYS

Will Reflect Our Experience In Helping Build P-47 Thunderbolts

YES, we are helping Republic Aircraft build these great fighter planes. In the Weisway factory we are making complete sub-assemblies for the P-47—ready to be incorporated in the finished plane.

Here is a job which involves familiarity with the latest developments in light, strong metals. It means fabricating to the precision requirements of the aircraft industry.

The "know-how" we have gained in this vital war work, our day-to-day experience will naturally be reflected in post-war Weisways, the improved Cabinet Showers we will produce when the war is won . . . when the choice of materials is again unrestricted and our production skill and resourcefulness can be applied unreservedly to peace-time products.

In the meantime Weisway Model V Cabinet Showers combine the best available materials with Weisway exclusive features and accurate prefabrication, to provide dependable and highly satisfactory bath facilities. These Cabinet Showers are available for prompt shipment and can be specified confidently for use in new construction or remodeling. Descriptive folder with complete information should be in your files—write now.

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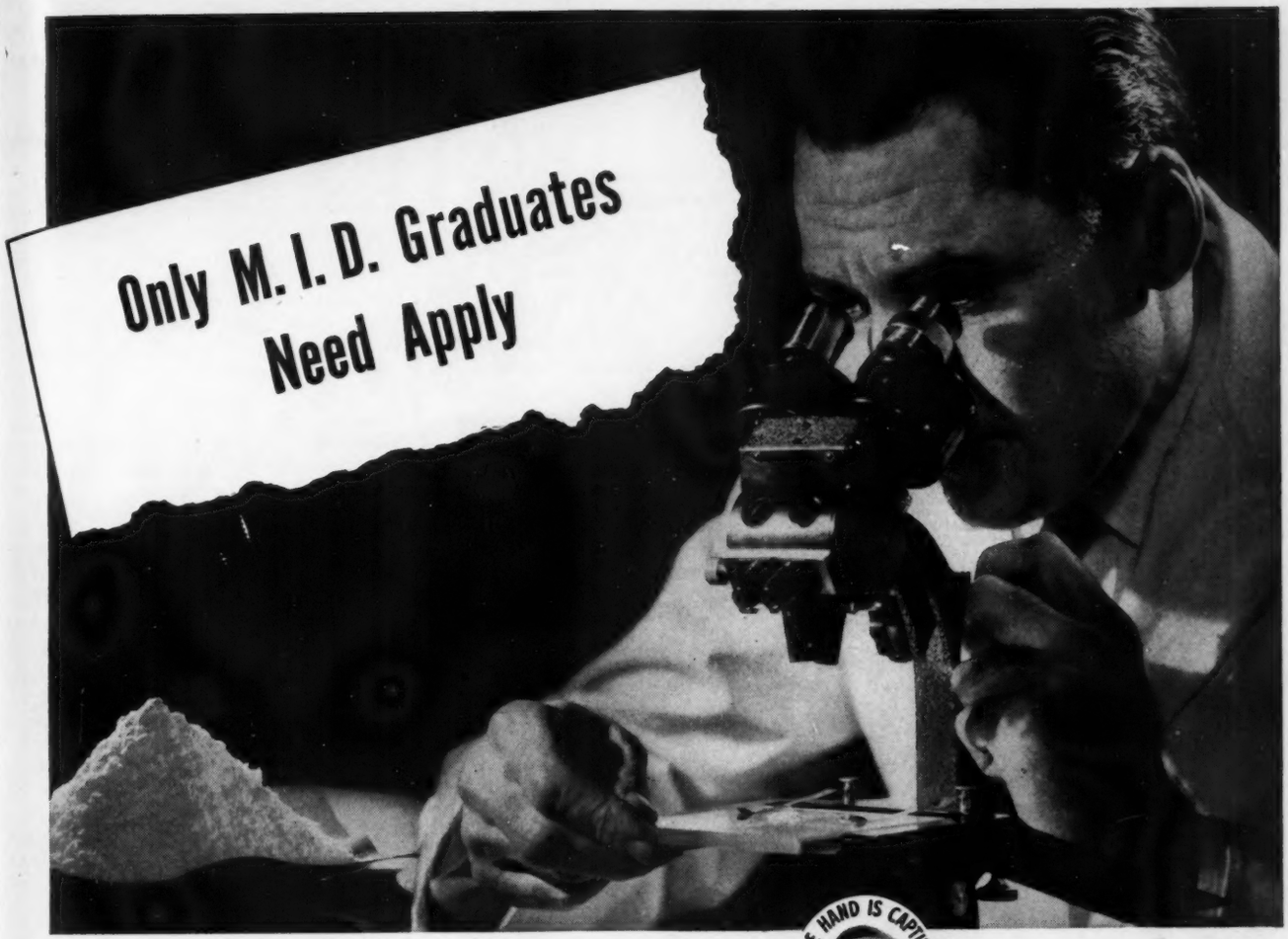

THE HAND IS CAPTIVE TO THE EYE

● M.I.D. — Material Inspection Department — is the first of many watchdogs that guard the quality of Sylvania Fluorescent Lamps. Before graduation from M.I.D. all materials must pass tough electrical, mechanical, chemical and visual tests.

Here an M.I.D. inspector is checking the quality of hair-fine tungsten, with a microscope, before it is released for fabrication into fluorescent cathodes.

The same painstaking care oversees each step of precision manufacture. When a finished Sylvania Fluorescent Lamp is ready for shipment to the war production front, it has to answer 49 quality questions. To pass this post-graduate course, it has to be the finest in fluorescent.

But the Sylvania standard of quality is not frozen into production. There are constant specifications and processing changes. Many of them, like the "Mercury Bomb" method of ultra-precise measurement, conserve metals and man power, but all of them serve to step up fluorescent performance.

Research results are more lumens per watt, longer life, a finer coating and more uniform light color. These are the good reasons why Sylvania Fluorescent Lamps can be specified, with full confidence, for replacements and for new installations authorized to promote visual efficiency in war plants.

FAR MORE LIGHT AND LIFE FOR YOUR MONEY

Compared with 1939, a dollar invested today in Sylvania Fluorescent Lamps buys more than four times the lumen output and approximately five times the lamp life.

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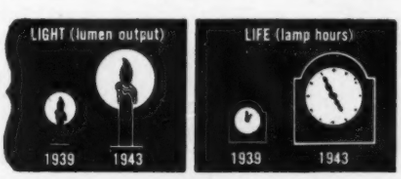

(Based on decreasing price and increasing efficiency and durability of Sylvania 40-Watt White Fluorescent Lamp)

Even on existing circuits, a change-over to fluorescent—Sylvania Lamps, Fixtures and Accessories—will probably more than double the light you get for the same wattage.

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(Continued from page 13)

complete way of life and thought. . . . Visiting Latin scholars, many of whom came to the United States with certain formed prejudices, have returned to their native countries filled with enthusiasm. Our own students in the South American republics are equally enthusiastic. What more convincing proof that knowledge is the only way to better inter-American understanding?"

In all Dean Arnaud gave forty lectures and had a very good reception everywhere he went, over one hundred attendants for every lecture except one. Stops were made in Rosario, Santa Fé, Paraná, Montevideo, Córdoba, Tucumán, La Paz, Lima, and Quito.

Cash prizes for excellence in art work done with drawing inks by high school students will be given again this year by the Higgins Ink Co., Inc. Three classifications are open: Mechanical Drawing, Freehand Drawing, and Cartooning and the 30 prizes range from $25 to $10. Entries should be sent to Scholastic Awards, Chamber of Commerce Building, Pittsburgh, Pa. or to a local sponsor by March 15th, 1944. Forms to be submitted with entries may be obtained from the same source.

Fifteen Latin American Fellowships were awarded September 20th in the annual competition of the John Simon Guggenheim Memorial Foundation. Two were granted to artists, two to economists, two to historians, one to a mathematician, one to a poet, and seven to biologists. The recipients were from Mexico, Argentina, Brazil, Chile, Cuba, Peru, and Puerto Rico. It is customary to grant these fellowships only to persons who, by work accomplished, have already proven themselves to be of the highest ability. The stipend is usually $2,000 per year plus travelling expenses to and from the United States where their studies and work are pursued.

The Worcester Art Museum (Massachusetts) announces a CONTEMPORARY NEW ENGLAND HANDICRAFTS exhibition for October 14 to December 26. Planned in collaboration with state and local handicraft organizations, the goal is both public attention to what has been attained and stimulation of originality of design with higher quality of workmanship. Objects made in rural areas by farmers and their families for their own uses will be included together with the skilled work commissioned of the professionally trained craftsmen. Demonstrations of handicraft techniques will be held.

The American Concrete Institute has formulated a report covering proposals for contributing to "plans for the creation of an orderly world from one in conflict and disorder, to help solve the problems of social and economic dislocation produced by war and to assist in the correction of those maladjustments from which wars gather their destructive force."

Among their purposes are: "discussion of ways and means toward a better postwar world . . .; that Congress . . . be urged to create at once a non-partisan national planning body of adequately diversified public representation, to gather, consider, and correlate information, to make public specific recommendations and to cooperate with planning agencies . . . with respect to domestic and international problems, looking toward the crystallization of policies and the promulgation of measures to meet the emergencies of the postwar period and the long-time adjustment of social and economic relations . . . "

Further aims include: postwar re-employment problems; encouragement of private enterprise; encouragement of units of industry to plan now for postwar operation; forwarding the preparation of a true "shelf" of postwar construction projects for which there are authorizations, surveys, plans and specifications, with financing provided; encouragement of the preparation of master plans for cities, and for metropolitan and regional areas. These are only a few of the purposes stated in the well organized report formulated by the American Concrete Institute and published in their Journal as well as in pamphlet form.

THE PAST, PRESENT AND FUTURE OF SEDGWICK LIFT EQUIPMENT

This book, just off the press, will be found interesting by all who contemplate any provision for vertical lift equipment in their structural plans for present or future needs. In these pages you will find portrayed a consistent development in design and utility which clearly demonstrates the high value of Sedgwick engineering in maintaining "a step ahead" to meet the steadily growing demand for lift equipment of all types and character. We shall welcome your request for a copy of this book.

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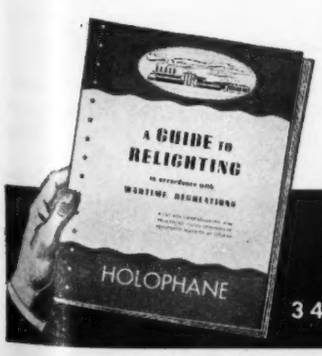
If plant management will delve beneath the pile of *obvious* reasons for industrial accidents they will likely discover the *hidden* cause—uncertain vision, inevitable result of inadequate lighting . . . The W.P.B. book "Plant Efficiency" states: "With the quicker perception and greater clarity of vision which good lighting makes possible, accident hazards will be recognized faster and more clearly" . . . HOLOPHANE Engineers, are concentrating all their skill and experience on the installation of safe, efficient, permanent lighting in war plants throughout the nation. They offer consultation and recommendations without charge.

Write for "Guide to Relighting in accordance with Wartime Regulations" . . .

Prepared by Holophane Engineers, this book presents pertinent facts regarding government restrictions; plus recommendations as to procedure and equipment. It is available to plant executives without charge.



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IF the need for a new lighting system is clearly indicated; IF the improved illumination will speed work on essential goods; IF specifications call for less critical materials . . . Holophane equipment meets all these requirements. Its basic element is prismatic glass (non-critical). Its installation saves in wiring, wattage, fixtures and maintenance. And above all it *definitely reduces accidents to workers and machines.*

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VIEWS

(Continued from page 8)

clarifying our position and restating views we have already expressed in the magazine and which we need not repeat in detail here. Mr. Bentley's final word, which follows, indicates agreement with us that our common objective is an architecture (not a style) that will be truly American, and that the names of the designers don't matter.
—EDITOR

Dear Editor:
Your good letter was most welcome. It has pretty much changed my picture of you and my attitude toward the NEW PENCIL POINTS. Instead of a bristling bearded Bolshevik, intent upon stirring up discontent, if not revolution within the architectural profession, I find you a human being with basic ideals not too far from my own.

My letters perhaps bore you to the air of intolerance, just as your editorials did to me. No doubt you picture me as an old crab with a long white beard, sitting at a draughting board with a Vignola spread out in front of me in an antiquated, dingy, old office lined with cob-webs. I am very much opposed to the habits of many architects who either "crib" from the past or who transplant bodily, bits of the old classics, placing them in modern settings without the least sense of appropriateness. On the other hand I maintain that violent over-night changes, completely discarding everything that is not a 1943 model, cannot result in anything but chaotic messes. I believe it takes time to build character, whether it be in our lives or in the life of architecture.

Why I brought foreign names into the picture was not because of any particular aversion to the names in themselves, as I believe you fully realize, but because so many atrocities published under the guise of Architecture, have been mis-carriages of persons with decidedly foreign names. And I use that word advisedly, because the stuff has been born long before it has been allowed to mature. Kenneth C. Black, of Lansing, Michigan, has expressed my sentiments most aptly in the August issue of the NEW PENCIL POINTS.

Had you used the essence of your letter to me, in your editorial, I am confident you would have accomplished much good for the magazine among the vast majority of your subscribers. All the ballyhoo in the world is not going to cause most architects to toss their ideals into the discard.
My hope is that Architecture and not Bauhaus will dominate NEW PENCIL POINTS from now on.

PERCY D. BENTLEY, Architect
Eugene, Oregon

Notices

The Toledo office of Harold Van Doren and Associates has announced the appointment, as resident manager of the Toledo office, of Russell R. Kilburn, industrial designer. Mr. Kilburn, formerly with Walter Dorwin Teague of New York City, is a graduate of the Yale School of Architecture and Beaux Arts School of Design.

Change of Address

JOSEPH D. WEISS, Architect, announces the re-establishment of his offices at 101 Park Avenue, New York City.

Data Wanted

THOMPSON B. BURK, of the firm of William Richard Burk, Architect, 1221 Lowerline St., New Orleans, La. (Data and catalogs for complete A.I.A. file.)

M. ARTHUR WOLF, Architect, Engineer, 850 Broad Street, Newark, N. J. (Data and catalogs for complete A.I.A. file. Also samples.)

FRANK E. BUSHEY, Cavetown, Maryland. (Data and catalogs for complete A.I.A. file)

C. W. BRANSON, Draftsman, 216 Central Bldg., Monrovia, Calif. (Data and catalogs for complete A.I.A. file. Also samples.)

Beautiful.. yes,
AND EFFICIENT TOO!

Post-War Window Areas will no doubt be larger, as current trends continue. While generous fenestration opens exciting design possibilities . . . . WINDOW EFFICIENCY will have to be examined more critically than ever before.

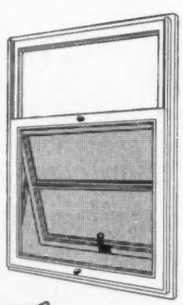
When stock-size Pella Casement Units are available again, compare these three design features with the field for BEAUTY and EFFICIENCY:

WOOD and STEEL both used in Pella Casement frames to combine beauty and strength.

ROLSCREENS, original roller-type inside screens. The ultimate in screen efficiency and convenience.

DUAL GLAZING, the single-panel type that mounts on inside of sash. Inconspicuous. Quickly and easily removed for cleaning.

Watch too, for the new Pella DOUBLE HUNG Windows which make the Pella line of windows COMPLETE for post-war homes and commercial buildings. ROLSCREEN COMPANY, PELLA, IOWA.



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Investigate Pella Awning-Type Windows available with screens and storm sash. For 2 x 4 frame, thin wall or masonry construction. White pine. Toxic treated. WRITE FOR FREE FULL-SIZE DETAILS. Address Dept. 1103.

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WE'RE READY TO WORK WITH YOU — NOW!

17,450* V-Day Jobs started...
9,555* in the Designing Stage

The architects of the country are starting a great early-post-war job . . . the building of a new America. This vital project is not just "up for discussion" — *it's on the boards.*

The total value of the known actual building jobs now scheduled for V-Day initiation is well over 1½ billion dollars. A large percentage of this work has reached the design-specification stage.

On many of these projects, Lockwood Builders' Hardware has been specified. Lockwood machines — now at work for Victory — are ready, together with the "know how" to resume with high quality builders' hardware as soon as the go-ahead is received.

Architects everywhere are finding Lockwood ready and equipped to assist now in putting this V-Day work on a ready-to-go basis . . .

*On the basis of a partial round-up of V-Day projects by F. W. Dodge Corporation. M

LOOK TO LOCKWOOD

for that extra something in the way of intelligent cooperation. For instance, take the distinctive hardware at Washington's Hotel Statler: Holabird & Root conceived a simple concentric design calling for escutcheons without screws. Lockwood engineers worked out a practical solution.

ARMY E NAVY

Lockwood Hardware Mfg. Co.

Division of Independent Lock Co. **Fitchburg, Massachusetts**

NEWS

(Continued from page 100)

Products Progress

Gas Air-conditioning

Servel, Inc. has been developing a gas operated air-conditioning unit for year-round residential use which they expect to put into quantity production after wartime restrictions are lifted. Complete in one unit are heating cycle, cooling cycle, circulating and filtering operations. Servel speaks of "effective cooling, positive dehumidification, efficient heating, controlled humidification, selective air circulation, and thorough air cleaning." Extensive research preceded this product and great expectations are held for it. (Evansville, Ind.)

Glass Tanks

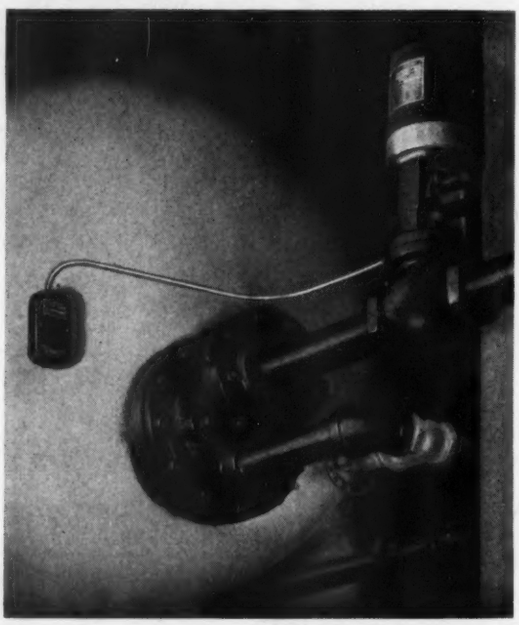
Industrial use of glass tanks or vats is becoming common, both for new installations and for relining existent units. A maker (Pittsburgh Plate Glass Company) says that "glass tanks are in no way to be considered as temporary. They are made strong enough and resistant to quick temperature changes, by a special tempering process which assures tanks that are permanent." It is pointed out that their glass is impervious to acids, alkalis, chemicals, and liquids of almost any type, that their tanks are of high tensile and compressive strength and are said not to rot, that they are also non-absorptive and non-porous. (Pittsburgh, Pa.)

BARBER-COLMAN

MAXIMUM SERVICE Controls BARBER-COLMAN COMPANY MINIMUM MAINTENANCE

GRILLES & REGISTERS
AIR DIFFUSERS
AUTOMATIC CONTROLS

AUTOMATIC CONTROLS FOR HOT WATER STORAGE

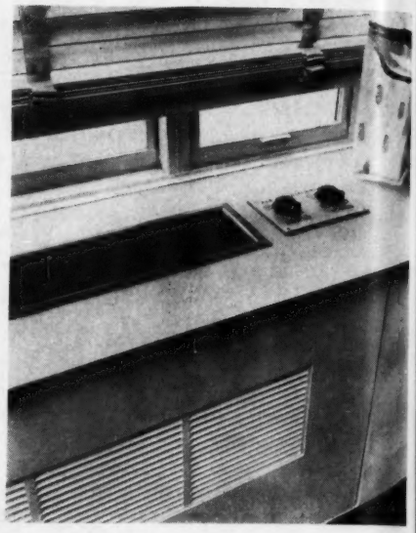


★ The storage of an adequate supply of hot water for washing and other purposes presents a problem of temperature control as well as of proper size and distribution of tanks. Actually, a control installation on each of a number of tanks will usually reduce the operating cost over the installation of a control on the central supply alone. Barber-Colman control equipment has demonstrated its ability to provide accurate maintenance of water temperature in storage tanks.

WATER KEPT HOT AT MINIMUM EXPENSE

★ With a simple BARBER-COLMAN CONTROL, consisting of a Thermostat in the tank and a Motor-Operated Valve on a steam supply line, the water in each tank is automatically maintained at the desired temperature. Heat losses from water supply lines are reduced to a minimum and the amount of steam used is also kept at a minimum by the automatically-operated valve. Once the thermostat is set, practically no attention is required for either adjustment or maintenance. BARBER-COLMAN equipment is quality-built throughout to assure a long life of dependable operation.

BARBER-COLMAN COMPANY 1230 ROCK STREET ROCKFORD, ILLINOIS



Individual Air Conditioning

Each guest can create his own indoor weather conditions in the new Statler Hotel, Washington, D. C., which is the first large hotel constructed to include year-round air conditioning in the entire guest area, according to the Carrier Corporation, installers. There are 931 units supplied with conditioned air at high velocity through relatively small pipes, eliminating the need for ducts; this feature resulted in the saving of space equivalent to two extra floors. Units are located beneath a window sill and a grill on the top of the sill diffuses air. Regulation of warmth of air is by means of a simple dial while humidity is controlled from the central plant at the top of the building. There are four zones of air conditioning to care for varying conditions due to different exposures of the building at all times of the day. The operation of this system is unusually quiet. Holabird and Root served as architect and consulting engineer on this hotel.

Oil Rationing Calculator

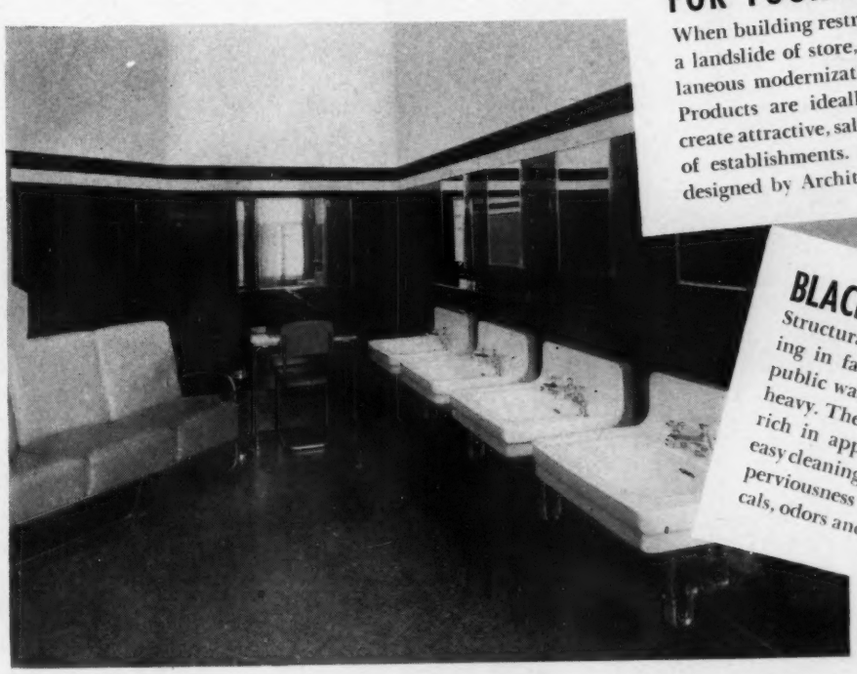
Necessity has done another bit of inventing and this time to help out the economizing and would-be-economizing oil consumer.

There is now a circular "slide rule," called a "Fuel Oil Ration Calculator." It comes printed on tough paper and sells for 25c. To operate:—revolve a pointer on its 4¾" inner disk to the number on its 5" outer

NEWS ABOUT GLASS
from "Pittsburgh"

FENESTRATION becomes increasingly important in building design as the trend toward larger window areas continues. Many architects make sure of quality glazing by specifying Pennvernon Window Glass. This is the handsome, Pennvernon-glazed hospital of the Medical College of Virginia, in Richmond. Architects: Baskerville & Son.

FOR YOUR STORE FRONT FILE.
When building restrictions are lifted, experts expect a landslide of store, theatre, restaurant and miscellaneous modernization projects. Pittco Store Front Products are ideally suited to help the architect create attractive, sales-winning exteriors for all kinds of establishments. This Pittco Theatre Front was designed by Architect L. P. Larson.



BLACK WALLS of Carrara Structural Glass seem to be gaining in favor . . . particularly in public washrooms where traffic is heavy. The black, polished glass is rich in appearance, yet provides easy cleaning, permanence, and imperviousness to moisture, chemicals, odors and pencil marks.

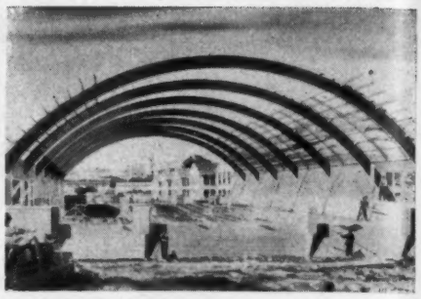
PITTSBURGH PLATE GLASS COMPANY · PITTSBURGH, PA.

"PITTSBURGH" stands for Quality Glass and Paint

Products Progress *(Continued)*

disk which represents the fuel allotment for the year; locate on the inner disk the date on which the reading is being made; directly opposite the date then can be found on the outer disk both the percentage of the heating season already elapsed and the number of gallons of fuel which theoretically was allotted for burning during that period. If too much is being burned . . . then comes the economizing.

This calculator is based on data assembled by the American Society of Heating and Ventilating Engineers and is printed and distributed by the Anderson Specialty Company, 215 East 9 Street, St. Paul, Minnesota.



RESIN GLUE AND WOOD

Giant laminated wood span trusses are being used extensively for roof supports in military structures. On one unusual job recently several three-hinged arches, with each section made up of thirty-seven ¾" x 8" boards, were stretched without support from groundlevel to groundlevel for over 117 feet, with a rise of 44 feet. These span arches, which measured 7" x 27½" in cross-section, are thought to be among the largest ever built of glue-laminated wood. Plaskon Resin Glue, manufactured by the Plaskon Division of the Libbey-Owens-Ford Glass Company, was used for all laminating of these arches.

Important feature of the laminated wood arches is said to be their permanent strength. The waterproof and weatherproof qualities of the glue and its resistance to fungi, etc. give an unbreakable bond between the wood laminations under all conditions. In shear tests the wood shatters leaving the glue intact.

Correction

The firm of Albert Kahn Associated Architects should have been credited with the design of the Dodge Chicago plant's recently erected water tank, illustrated on page 84 of the September issue of NEW PENCIL POINTS. *We sincerely regret the inadvertent omission.* —Editors

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